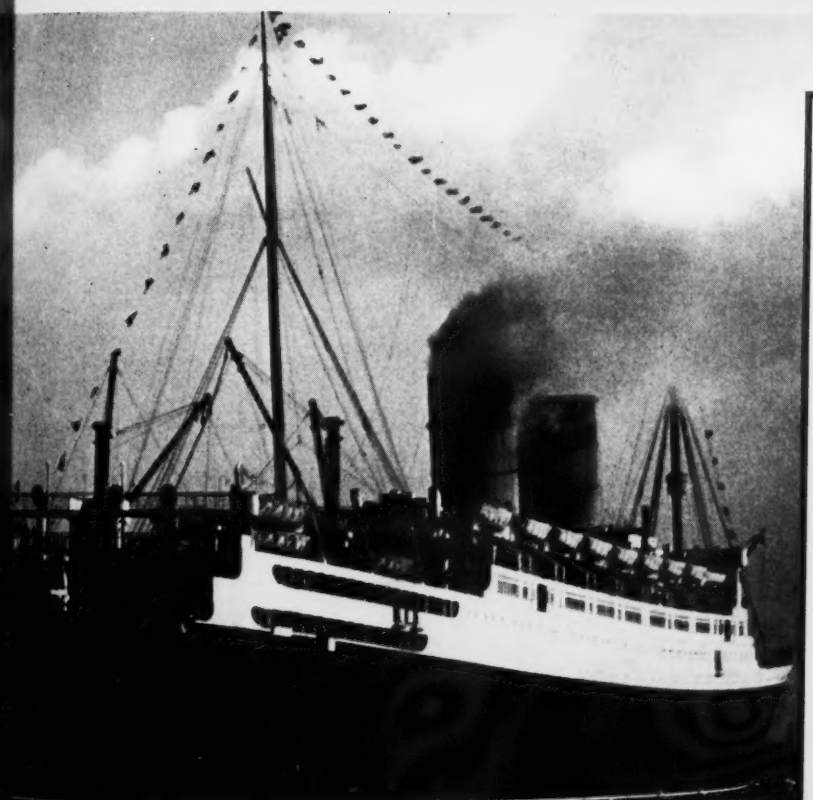
SOAP

SANITARY CHEMICALS



Remember?

REMEMBER when you could start on a sea voyage without sailing into a war infested ocean?

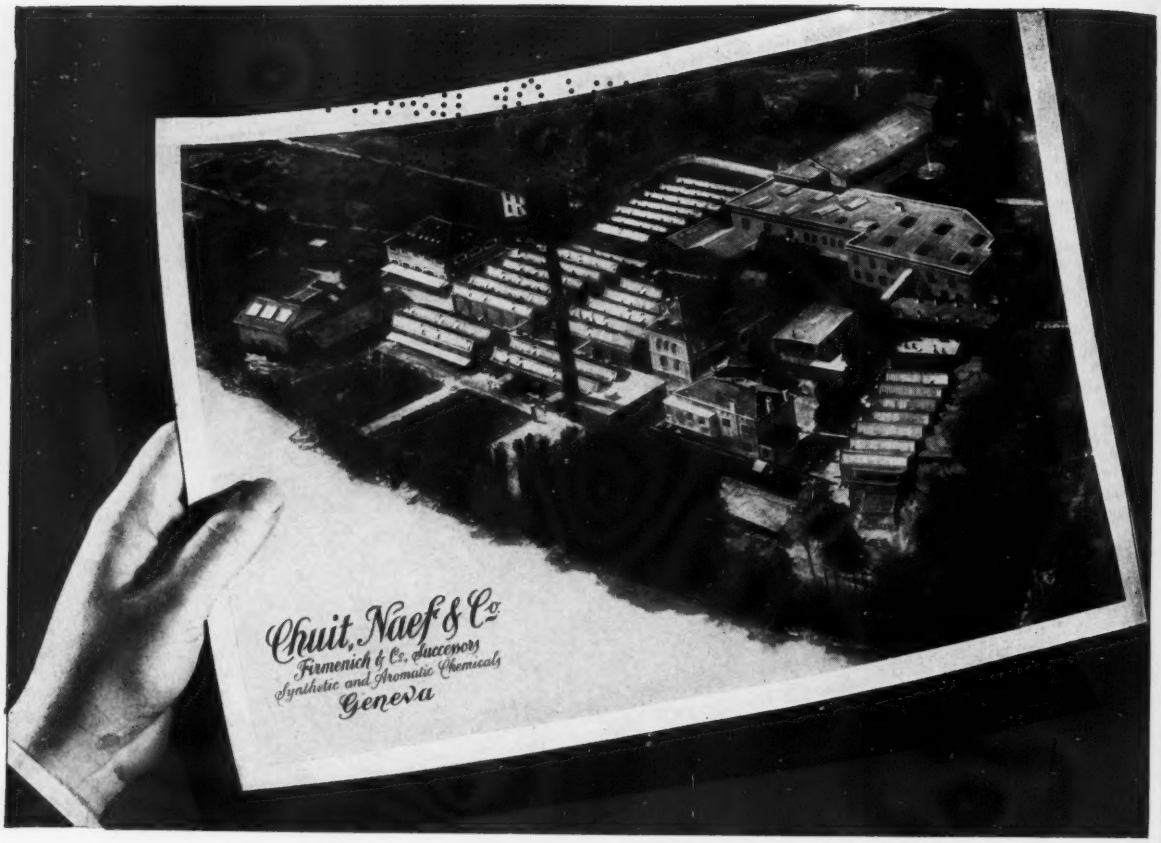
Remember when the soap business was smooth sailing . . . when production and raw materials were not the headache they are today?

And of course, you do remember how Ungerer has always been your prime source of perfuming raw materials. For three generations we have been helping to solve the perfumery problems of our customers. As your other problems increase in seriousness please remember that Ungerer invites your perfuming problems for solution.

UNGERER & CO.

13-15 W. 20th St., New York

© Cunard-White Star Line



Forty-five Years a Leader

Since 1895, the name of Chuit, Naef has been synonymous with the production of the highest quality group of synthetic and aromatic chemicals obtainable. Today, as then, this reputation continues unmatched.

Throughout these years the Chuit, Naef organization has expanded its products to the point where they now rank as the most complete line of perfume raw materials available to the soap, perfume extract and toilet goods fields.

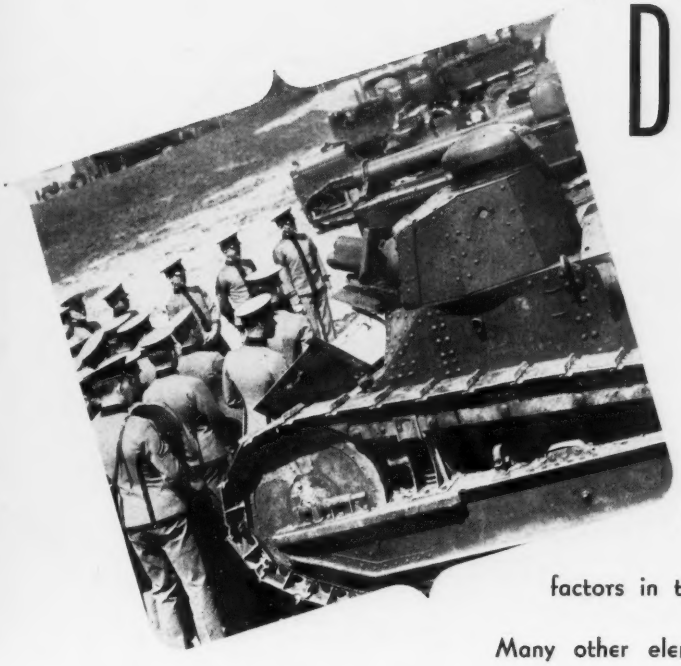
The laboratories at Geneva, Switzerland, are constantly *showing the way* in the development of new aromatic materials, basic specialties and finished compositions that aid *you* in solving your perfume problems.

As sole United States agents, let us convince you of the remarkable adaptability of our products to your line— *and our ability to deliver!*

FIRMENICH & CO., INC.

[illegible] FIFTH AVENUE, NEW YORK, N. Y.

DEFENSE AND MORE DEFENSE



Men and tanks are important factors in the program for National Defense. Many other elements are equally important, not the least of which is the promotion of Health through Sanitation.

FULD products represent preparedness through production of the finest Sanitary Chemicals on the market today. There is no substitute for the best.

DEODORANT BLOCKS
LIQUID DEODORANTS
POWDERED WAXES
FLOOR TREATMENTS

DEODORANT BLOCK HOLDERS
SELF-POLISHING WAXES
LIQUID SOAPS • OIL SOAPS
INSECTICIDES • DISINFECTANTS

FURNITURE POLISHES
PLUMBING SPECIALTIES
SPECIAL CLEANERS
SOAP DISPENSERS

LIQUID CLEANERS
PASTE WAXES
FLOOR SEALS
METAL POLISHES

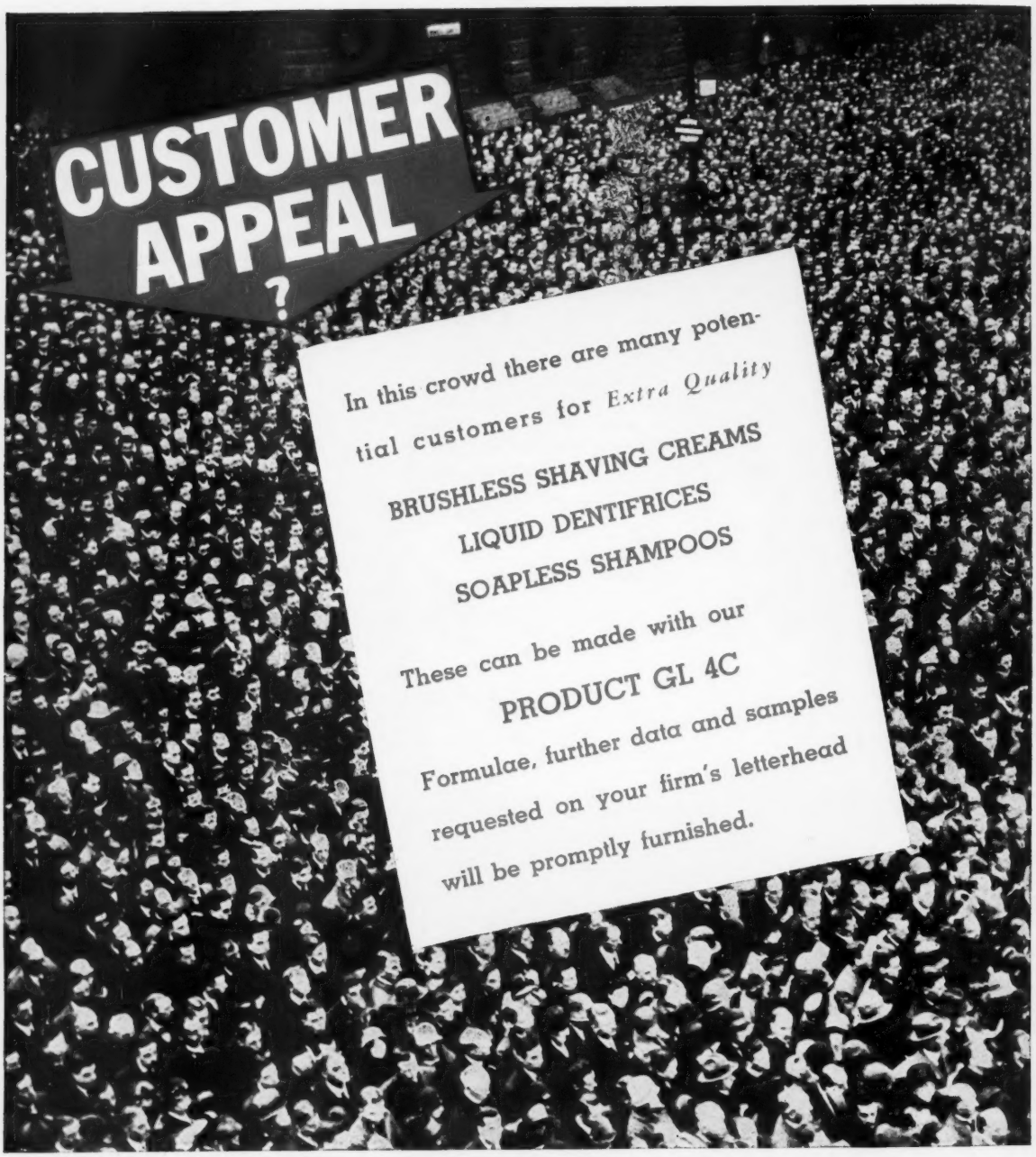
FULD BROS.

SELLING JOBBERS ONLY!

702 South Wolfe Street — Baltimore, Maryland

Sales Offices: • Seattle • San Francisco • Kansas City • Boston • Brooklyn

Has Your Product


CUSTOMER APPEAL ?
In this crowd there are many potential customers for *Extra Quality*
BRUSHLESS SHAVING CREAMS
LIQUID DENTIFRICES
SOAPLESS SHAMPOOS
These can be made with our
PRODUCT GL 4C
Formulae, further data and samples requested on your firm's letterhead will be promptly furnished.

Aromatics Division

GENERAL DRUG COMPANY

644 PACIFIC STREET, BROOKLYN, N. Y.

9 SO. CLINTON STREET, CHICAGO — TRANSPORTATION BLDG., LOS ANGELES

1019 ELLIOTT ST., W., WINDSOR, ONT.

Volume XVII Number 9

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

SEPTEMBER
1941

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 71.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Contents

- Editorials 19
- The Olive Oil Picture..... 21
- Record Soap Output..... 24
- Perfuming Materials—A Review of the Supply Situation 27
- Notes on Waterless Cleansers..... 30
  By Dr. C. A. Tyler
- Notes on Shaving Soaps..... 57
- The Disinfecting Value of Pine Oil Emulsions... 88
  By Dr. George F. Reddish
- Kenya Pyrethrum 91
- Toxicity of Rotenone..... 93
  By Dr. R. C. Roark
- Testing Impregnated Fabrics For Antibacterial Properties 94
  By Doris J. Hirschmann and Helen M. Robinson
- Plant Sprays—Part II 105
  By Thomas L. Carpenter
- Contracts Awarded 45
- New Trademarks 47
- Raw Material Markets..... 51
- Raw Material Prices..... 53
- Products and Processes..... 61
- New Patents 63
- New Equipment 65
- Classified Advertising 121
- Advertisers' Index 131

Published by

MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation, August, 1941, issue, 3,800 copies. Total circulation, 4,000.

IDENTICAL EXCEPT IN COST

(In Detergent Efficiency and Sudsing Power)

Cut Costs and Maintain Soap Flake Efficiency with GENERAL CHEMICAL *TSPP* Plus GENERAL CHEMICAL *SODIUM SILICATE*

With this efficient General Chemical team . . . TSPP and Sodium Silicate . . . you can actually keep costs down with no loss in soap efficiency.

General Chemical Sodium Silicate as a builder, helps increase bulk, retards rancidity in the finished product and gives your soap that desirable firm-bodied quality. By stepping up soap with General Chemical TSPP and Sodium Silicate, you can improve appearance of the product, as well as maintain high detergent efficiency and sudsing power.

GENERAL CHEMICAL COMPANY

40 RECTOR STREET, NEW YORK, N. Y.

Sales Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) • Buffalo • Charlotte (N. C.) Chicago • Cleveland • Denver • Detroit • Houston • Kansas City • Milwaukee • Minneapolis Newark (N. J.) • New York • Philadelphia • Pittsburgh • Providence (R. I.) • St. Louis • Utica (N. Y.)

Pacific Coast Sales Offices: San Francisco • Los Angeles

Pacific Northwest Sales Offices: Wenatchee (Wash.) • Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

GENERAL CHEMICAL COMPANY

GENERAL CHEMICAL TECHNICAL SERVICE DIVISION

This Division is manned by a staff of technically trained men thoroughly conversant with the use of chemicals in the Soap Industry. Inquiries for information are given prompt attention —and where advisable, a representative will be assigned to work on the problem with the customer in his own plant.

"NATIONAL CAN"

Matches *Product* QUALITY

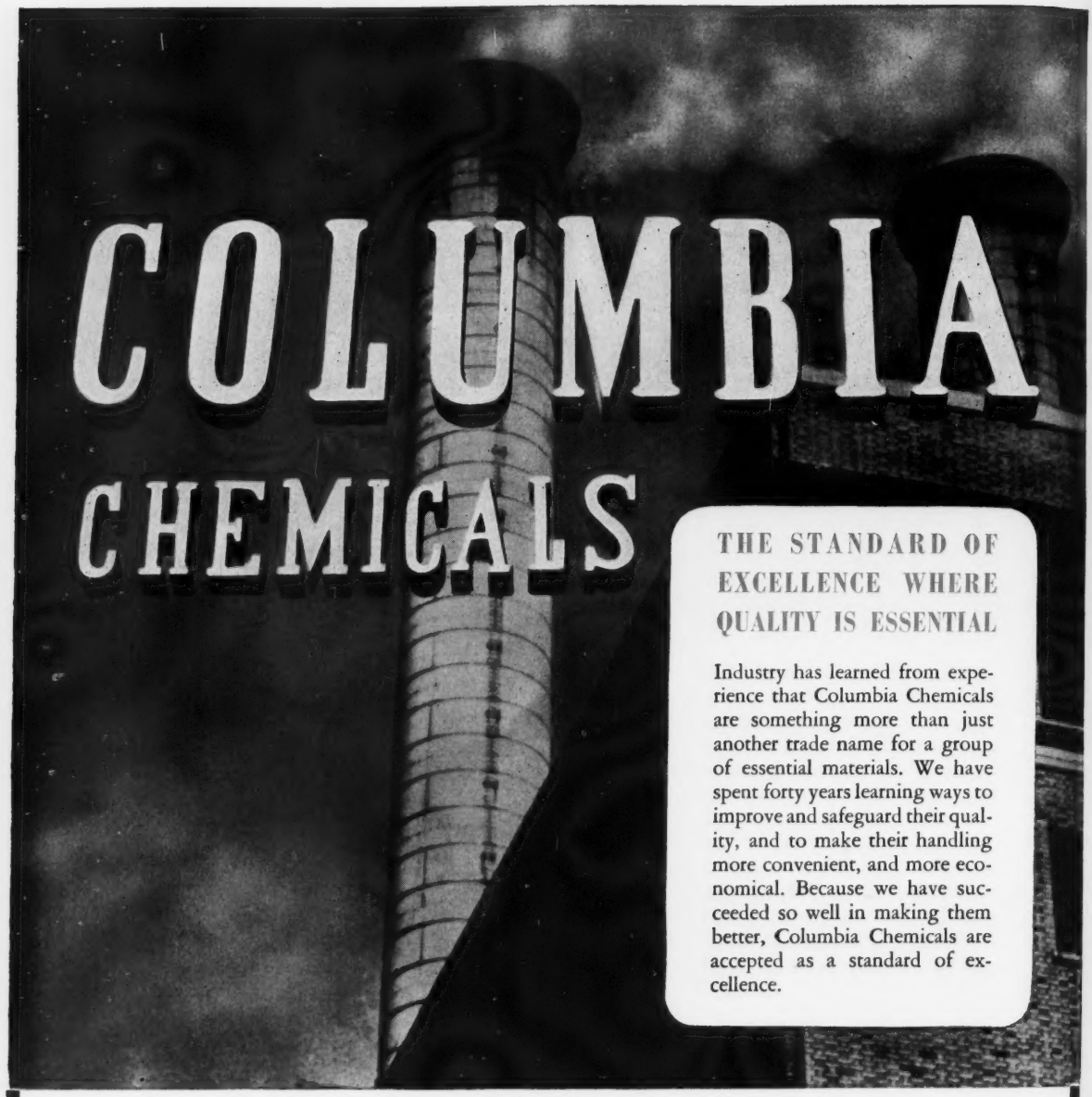
with PACKAGE *Style!*

CONTAINERS like this rate high in **POPULARITY** around store counters .. reason enough to consult **"NATIONAL CAN"** on package style .. on design and decoration that forces your product to meet buyers *easily* and *often!*

NATIONAL CAN CORPORATION

EXECUTIVE OFFICES: • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MASPETH, N Y • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO


COLUMBIA
CHEMICALS
THE STANDARD OF EXCELLENCE WHERE QUALITY IS ESSENTIAL
Industry has learned from experience that Columbia Chemicals are something more than just another trade name for a group of essential materials. We have spent forty years learning ways to improve and safeguard their quality, and to make their handling more convenient, and more economical. Because we have succeeded so well in making them better, Columbia Chemicals are accepted as a standard of excellence.

ESSENTIAL INDUSTRIAL CHEMICALS

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE
SILENE • CALCIUM CHLORIDE • SODA BRIQUETTES • MODIFIED SODAS
CAUSTIC ASH • PHOSFLAKE • CALCENE • CALCIUM HYPOCHLORITE

COLUMBIA
COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
Columbia Chemical Division
30 ROCKEFELLER PLAZA
NEW YORK, N.Y.
Chicago • Boston • St. Louis • Pittsburgh • Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte

FLASH THIS DUO ON YOUR TOUGH PROSPECTS

Here's the wax selling team that sells those tough babies who "won't switch to your wax or any other." Start them off with HYSOLENE, the remarkable new emulsion type wax floor cleaner and wax remover. It's easy to sell them HYSOLENE because they have been looking for just such a product and couldn't get it. HYSOLENE safely removes dirt faster than soap, increases lustre, seals pores and builds up surface so that it takes 55% less time for next waxing. One application convinces.

After they start using HYSOLENE, you will receive inquiries for "a wax that does for waxing a floor what HYSOLENE does for maintaining it." That's your cue to talk SUPER-WAX. SUPER-WAX gives them higher gloss and less slip in one and the same wax. That, too, is something they couldn't get before. They say so when they reorder.

For a first-hand idea of what this HYSOLENE—SUPER-WAX team can do for your sales, write for samples of both. Do it today.

HYSAN
MANUFACTURING CHEMISTS

HYSAN PRODUCTS COMPANY -:- 58 E. Cullerton Street, Chicago

MORE IMPORTANT THAN EVER . . .

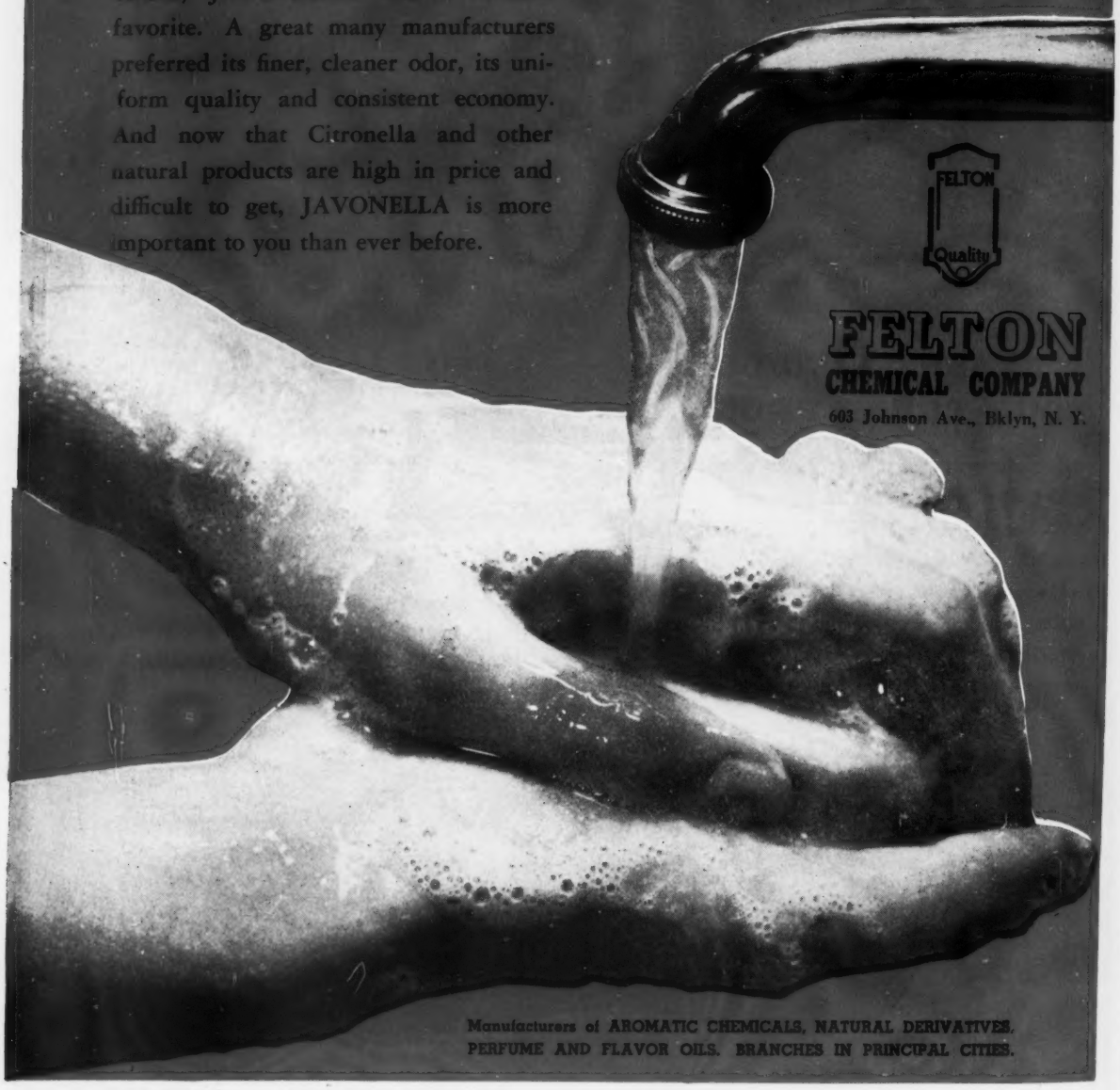
Javonella

PERFECT FOR PERFUMING

★ Laundry Soaps ★ Washing Powders ★ Liquid Cleansers ★ Polishes, etc.

EVEN when oil of citronella, sassafras, etc., were low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella and other natural products are high in price and difficult to get, JAVONELLA is more important to you than ever before.

WRITE FOR SAMPLES AND QUOTATIONS



FELTON
CHEMICAL COMPANY
603 Johnson Ave., Bklyn, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME AND FLAVOR OILS. BRANCHES IN PRINCIPAL CITIES.

DOW SYNTHETIC AROMATICS

COUMARIN

DIPHENYL METHANE

DIPHENYL OXIDE

INDOL

METHYL ANTHRANILATE

METHYL SALICYLATE

METHYL PHENYL CARBINYL ACETATE

PHENYL ETHYL ALCOHOL

STYRENE P-100

SALICYLALDEHYDE

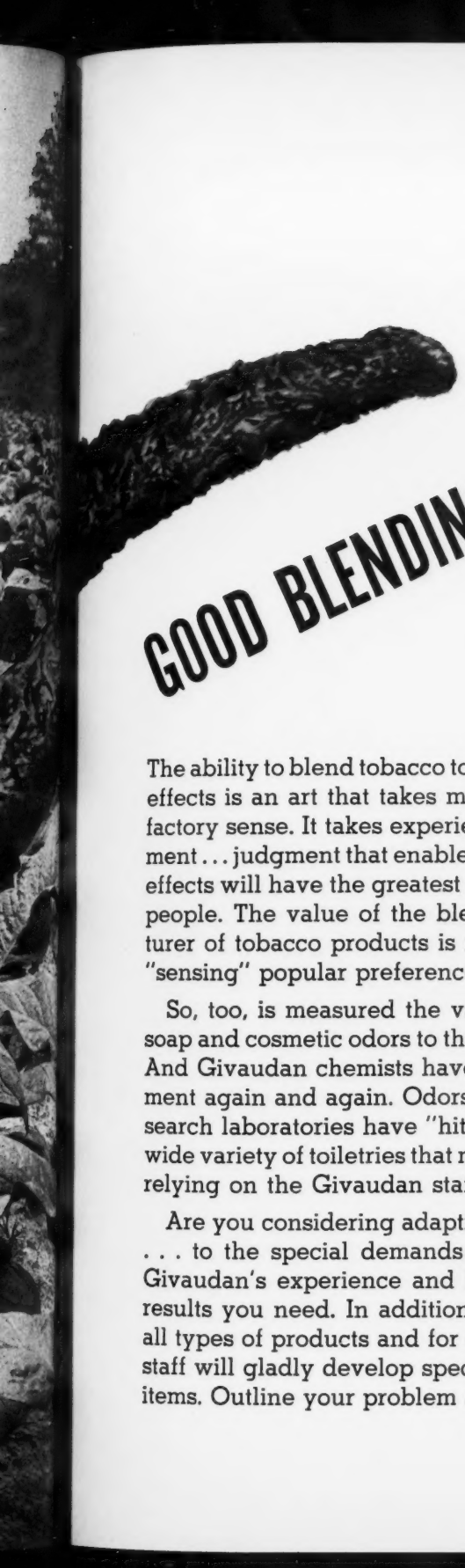
THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

NEW YORK • ST. LOUIS • CHICAGO • SAN FRANCISCO • LOS ANGELES • SEATTLE • HOUSTON

DOW

Working with you for America

GIVAUDAN-



GOOD BLENDING CALLS FOR GOOD JUDGMENT

The ability to blend tobacco to produce pleasing, sales-creating effects is an art that takes more than a highly developed olfactory sense. It takes experience, knowledge and good judgment . . . judgment that enables the blender to determine which effects will have the greatest appeal to the greatest number of people. The value of the blender's services to the manufacturer of tobacco products is measured by his competence in "sensing" popular preferences in tastes and aromas.

So, too, is measured the value of the blender of perfume, soap and cosmetic odors to the manufacturer of such products. And Givaudan chemists have demonstrated their good judgment again and again. Odors developed in the Givaudan research laboratories have "hit the nail on the head" in such a wide variety of toiletries that more and more manufacturers are relying on the Givaudan staff for inspiration and assistance.

Are you considering adapting your line to changing trends . . . to the special demands of fashion or the seasons? Let Givaudan's experience and knowledge help you to get the results you need. In addition to ready-to-use compounds for all types of products and for complete lines of cosmetics, our staff will gladly develop special odors for specially prepared items. Outline your problem and ask us for suggestions.

FOR YOUR REQUIREMENTS ON PHENYL ETHYL ALCOHOL

Givaudan's Phenyl Ethyl Alcohol is noted for that important feature always demanded by the perfumer—*purity*. It is maintained by a strict system of checking and re-checking—scientific control over every phase of production. Givaudan's Phenyl Ethyl Alcohol is characterized by its sweet rose-like note. Let our long experience in producing this important material guide you in your search for quality.

★ ★ ★

Givaudan's Phenyl Ethyl Alcohol is made by a process fully protected by U. S. Patents Nos. 1,944,959; 1,944,958; and 2,013,710.

N-DELAWANNA, INC.

330 WEST 42ND STREET, NEW YORK, N. Y.

Du Pont TSPP Helps the War against Waste by doing so many jobs better

OF PARTICULAR interest to manufacturers of washing and cleaning compounds is the ability of TSPP to *disperse and suspend* dirt and other inert materials. Not only does it assist detergents in removing foreign matter from the article being cleansed, but TSPP also keeps this dirt so well dispersed or suspended that it will not be redeposited on the cleansed surface.

In addition to this important characteristic TSPP:

- . . . *dissolves readily*
- . . . *is mildly alkaline*
- . . . *reduces the quantity of insoluble hard-water soaps*
- . . . *keeps iron compounds in water in soluble or dispersed form*
- . . . *has some "wetting" action*
- . . . *prevents the formation of sticky scum*
- . . . *improves rinsing*

These and other advantages of Du Pont TSPP give it a wide range of applications in preference to common alkalies. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington, Delaware.

DU PONT
REG. U. S. PAT. OFF.

TETRA SODIUM PYROPHOSPHATE

Norda

Scarcity of floral oils . . .

Present dwindling supplies of natural floral essences emphasize the value of high quality substitutes.

Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these newer substitutes as an answer to the growing scarcity of natural floral oils.

NORDA Essential Oil and Chemical Co., Inc.

Chicago Office
325 W. Huron St.

St. Paul Office
253 E. 4th St.

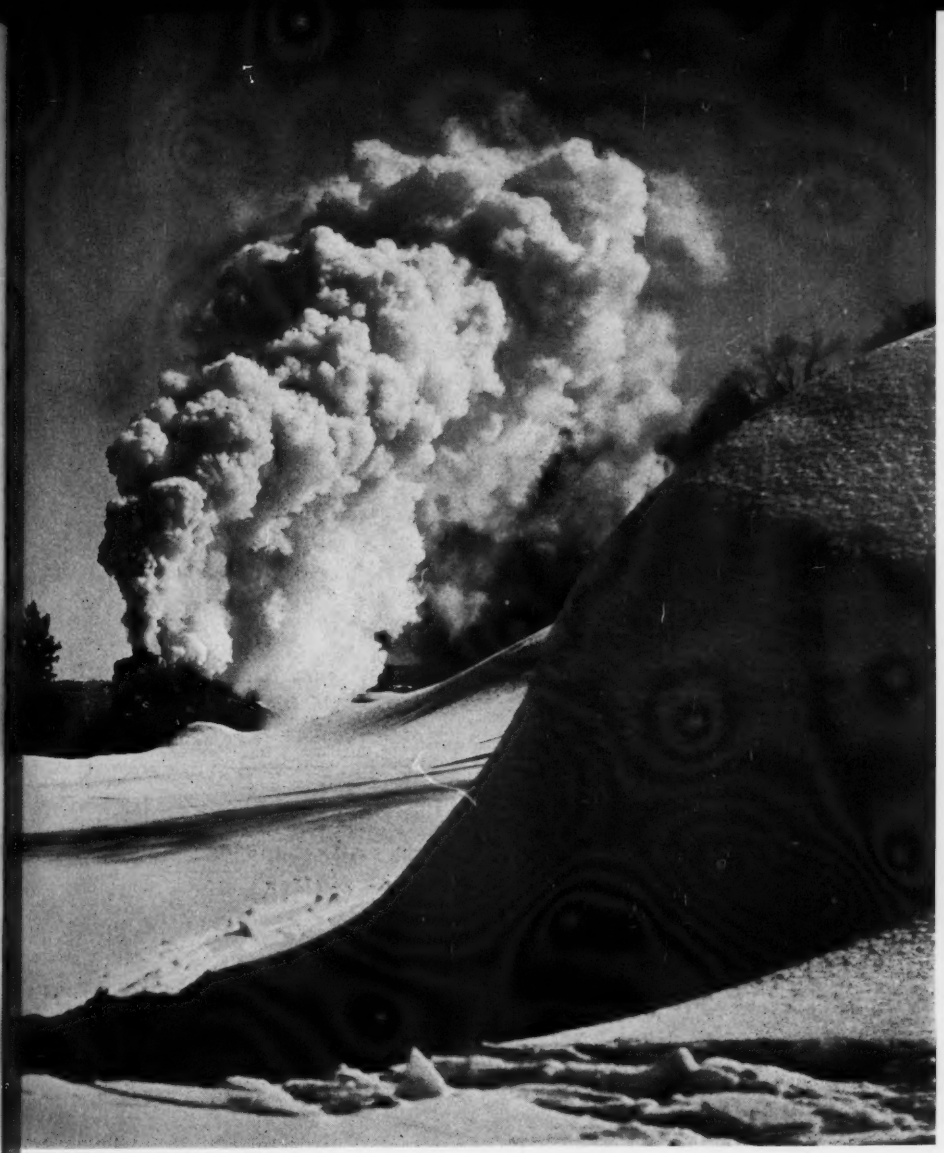
New York Office
601 West 26th St.

Los Angeles Office
2800 E. 11th Street

Toronto Office
119 Adelaide St., W.

Montreal Office
135 Commissioners St., W.

JOBBERS' SALES ARE PROOF...
'30
'31
'32
'33
'34
'35
'36
'37
'38
'39
1940
1941
6 months
THERE'S A STEADILY INCREASING DEMAND FOR "BEAMAX"
"BEAMAX"
DRIES TO A LUSTRE
LIQUID WAX
does not require polishing...
THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO



Snowbound

In March of 1940, a seasoned salesman was snowbound in Boston when all traffic by rail and road was paralyzed. Due in New York, his predicament enforced his first plane trip. For years he had traveled by train and while he comfortably slept in Pullmans, aeronautical engineers were contriving better design and safety in air transportation. When his faithful train failed, the modern plane was ready to do the job, and well.

In times like these, when regular supplies of essential oils and raw materials have failed, the call for synthetics and substitutes, is raised. And the answer, "ready", is heard from the ranking firms in our industry who have, through the less hectic years, kept their research laboratories awake to new methods, new processes and new products.

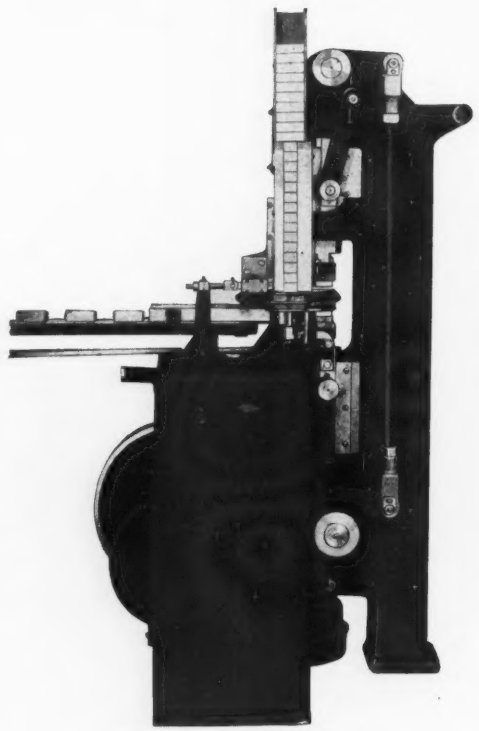
Bergamot, Lavender, Geranium, Ylang, Orris and many other materials, are practically unobtainable, but synthetics and truly excellent synthetics, are ready to jump in and fill the gap just as the airlines were ready when rails were snowbound.

If your stocks are low, check with van Ameringen-Haebler on these exceptional synthetics.

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVE NEW YORK CITY

We All Worship At The Shrine Of Beauty . . .



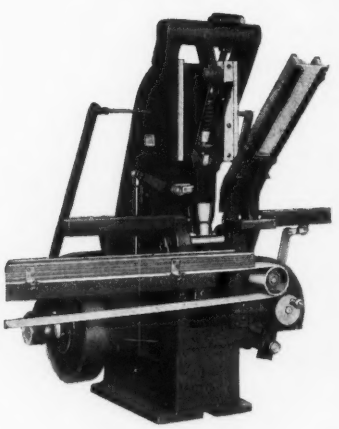
Type ET Toilet Soap Press

Well pressed cakes of soap with a beautiful finish enjoy buyers' preference.

This fact is so well established that leading soap makers now spare no expense or effort to produce cakes with the most beautiful finish, a finish obtainable only thru the use of

JONES *TOGGLE OPERATED* SOAP PRESSES.

JONES TOGGLE PRESSES operate without noise or vibration . . . and insure greater economy in production. They are run to capacity by one operator.



TYPE G

Toggle Operated
Press for Pin Die Work

R. A. JONES & CO., INC.

P. O. Box 485 — Cincinnati, Ohio

The Standardized *Constant Motion Cartoner* packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds and inserts direction sheets and corrugated board liners with the loads.

AS THE EDITOR SEES IT

AS SHORTAGES of raw materials, particularly chemical raw materials, become more numerous, the problems of the average manufacturer of soaps, detergents and cleaners are multiplied proportionately. And if we may judge from the words of officials of the O.P.M. and other bodies in Washington, supplies for industry in general will become smaller before they grow larger. In short, defense requirements will mean the diversion of more and more materials away from strictly non-defense industry. Except where soaps and detergents are being manufactured to supply the armed forces and other government departments, it would seem that these materials can lay little claim to a defense status.

The supply of raw materials in the hands of soap makers is probably fairly substantial today in spite of recent peak production levels. But it is not today that the average manufacturer is worrying about. It is next year and possibly the year after,—and as long after that as the present rate of defense production is maintained. That some manufacturers are inclined to become panicky when they read the statements which come out of Washington, is only natural. Who wouldn't worry if he took at its face value all the predictions from government officials about wiping out whole industries and large parts of other industries? Who, after building up a business over twenty, thirty or even fifty years, could twiddle his thumbs and smile at the threat of having it wiped out.

Most manufacturers of soap products, we believe, are fairly well heeled with materials. But some are not, and it is they, we feel, who will suffer most in months to come. Naturally, as is invariably the case, they are smaller firms, firms who lack the money to lay in a large excess of raw materials. At the same time, we have a hunch that it is not going to be as bad as we may anticipate even though it may look that way right at the moment. We feel that ways will be found to keep most non-defense firms supplied with at least some raw materials. But we do believe that in the meantime every effort should be put forth to conserve every last pound of everything on hand, that small soapers should scrupulously avoid overselling themselves, and that he who cuts his price even so much as a tenth-of-a-cent should have his head examined.

WASN'T it Leon Henderson of OPACS who warned a few weeks ago that wages, prices, and consequently the cost of living should not be allowed to rise too greatly? Naturally, steadily rising labor costs mean higher material costs, and higher material costs mean higher prices for everything, and higher prices if they go high enough mean just one thing,—inflation. Quite obviously Mr. Henderson meant that there should be no inflation. We think so too,—and we also think that there should be a rule against rain on the Fourth of July.

Defense industries of all kinds have taken thousands of workmen away from non-defense industry and from each other. Workers have been attracted by the simple expedient of offering them more money,

and then the fellow who loses workmen must raise his ante to get new men or in an attempt to keep old ones. And so it goes. It is the old inflation formula which can get into high gear readily when the demand for men and materials is great enough. And to us it appears that this demand is pretty big today and getting bigger.

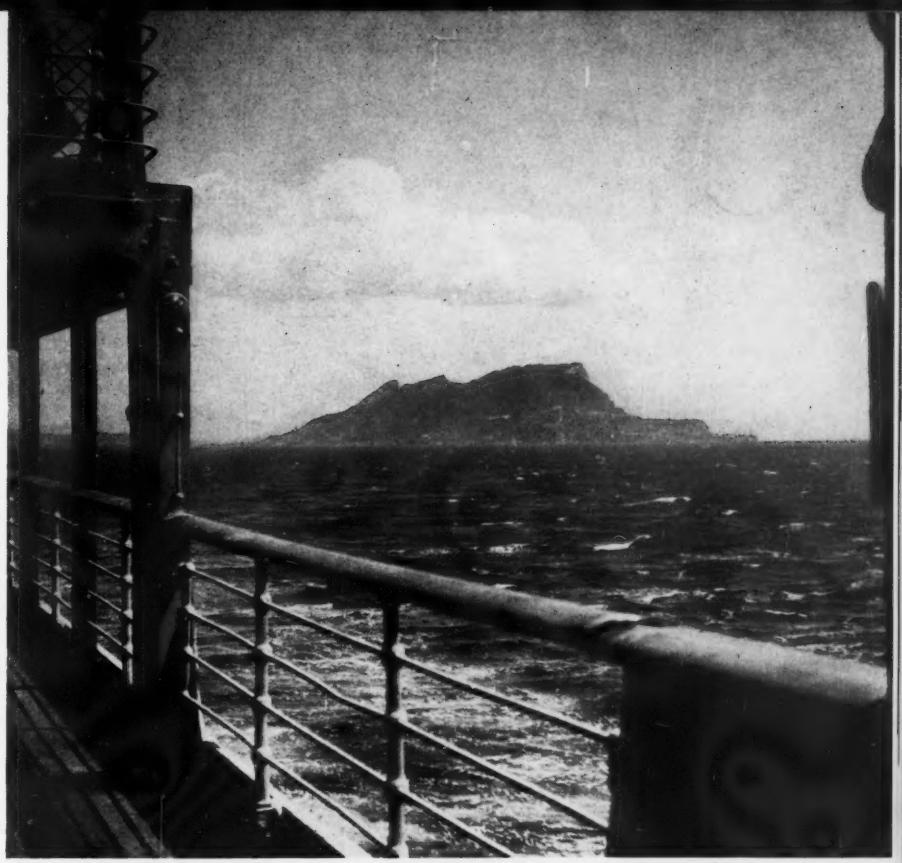
But Mr. Henderson, and others in Washington who are aiding in steering our ship-of-state on its dizzy journey through rather perilous waters, supposedly has means to hold advancing prices in check. In other words, Congress in its great wisdom has given him the power to put the smudge on the law of supply and demand for the duration. But the last fellow that we knew who tried this, came up with an awful black eye and a mouthful of loose teeth. The old law of S and D has a habit of hitting out in the most unexpected manner and in the most unusual places. But maybe this time, it will be different. Maybe Leon Henderson, et al, are smarter.

IF YOU can't get one raw material, use something else. If cement is scarce, use bricks. If you have been using oil under your boilers and your oil man cuts down your supply, try coal. They say that it gives lots of heat. If you have been using chrome fittings on your soap dispensers and "no can get," use plastic parts instead if you can get plastic parts. Don't be a stick-in-the-mud. Get out of that rut. Be versatile! Use substitutes!

This is the gist of some high-pressure advice which we read recently and supposedly emanating from Washington to help guide manufacturers of non-defense products through the mystic maze of the defense program. So we thought that maybe the fellow who handed out this sage advice could help a good friend of ours, a manufacturer of potash soaps who needs considerably more caustic potash than he can obtain. Possibly this bird can give us the name of a good substitute for caustic potash and who sells it. At any rate, it wouldn't hurt to ask.

SEVERAL years ago, a buyer of private brand toilet soaps supplied to his soap manufacturer the perfume for a certain lot of soap. This soap perfume was designed to "match" the odor of a rather high-grade line of cosmetics. Inasmuch as the soap was supposed to be white, the soaper was reluctant to accept the perfume and urged the buyer to permit him, the soaper, to match the odor. And, when the buyer insisted that his home-compounded perfume be used, the soaper refused to accept responsibility for the results. The buyer pooh-poohed the idea of trouble and the soap was perfumed, milled, and packaged. In sixty days, it took on the complexion of a Malayan mummy with measles, and the entire stock was taken out of the stores and sold to an odd-lot house at a fraction of its cost.

In this day and age, with natural perfuming materials scarce and high-priced, the motive to save money with home-compounded odors is great. Experimentation with basic synthetics and lower cost oils is a temptation. For those who have not been led into trouble by this temptation, there is an obvious moral to the foregoing more or less common experience. Let those who through years of experience really know what soap perfuming is all about, do the compounding for you. Many a good compounder of perfumes for other uses has been thrown for a loss when it comes to perfuming white soap. So we suggest now, above all times, when spoiled and returned goods are a double headache, that ambitious amateur soap perfumers suppress their desires to save money on odors, and place their faith in the supplier of perfuming materials. It will be definitely more satisfactory and probably cheaper in the long run.



As long as Great Britain remains mistress of Gibraltar, the produce of the Mediterranean area, which includes the bulk of the world's production of olive oil, will be cut off from its normal world markets.

A Review of the

OLIVE OIL PICTURE

THE theme song of 1941,—diminishing supplies and rising prices of raw materials,—applies in the most extreme degree to the present situation on olive oil. Olive oil, perhaps more than any other soap oil, has been linked very closely with international developments ever since trouble began brewing in Europe. Successive military campaigns have been fought in olive producing areas. It has been the subject of embargo after embargo. It has been affected by restrictions of all types in producing countries. It has been hit severely by the shipping situation. In short, every factor has made it more difficult for consuming industries in the United States to obtain olive oil freely and easily. All this has had the net effect of making the American soaper and other users of olive oil products less dependent on olive oil, olive foots, etc., as raw materials. Many industrial users of olive oil soaps, too, for example, have been weaned away from products they once considered as indispensable and are finding that other products can be used as replacements.

Wherever it has been found possible to carry on without olive oil, industries have been doing it, and have been forced to look for substitutes. And, in most cases, substitutes of some sort have been found. Consequently, consumption of olive oil for commercial purposes in the United States has fallen gradually during the past decade or so. Naturally, under war conditions, the trend away from olive oil and olive oil products has been accelerated, of necessity, by their ever increasing scarcity.

Import statistics tell the story, in part. During the years 1931-1935, for example, imports into the United States of inedible olive oils (including commercial or denatured olive oil and sulfur oil or olive foots) averaged about 54 million pounds a year, but following 1935, imports dropped to a yearly average of only 30 million pounds for the period 1936-1940. In 1940, the United States imported only slightly more than 5 million pounds of commercial olive oil and 24.5 million pounds of olive foots. However, it was not until the current year that really extreme shortages began to be felt by consumers of olive oils and olive oil products. In retrospect, conditions prior to this year were fairly easy in comparison with those that have since developed.

This is amply demonstrated by the fact that imports of commercial olive oil for the first quarter of 1941 amounted to a mere 400,000 pounds and olive foots imports totaled only 900,000 pounds. And since the end of March, it is well known that imports and supplies have dropped still further. At the end of March, olive oil was selling at an

approximate price of $2.40 a gallon and foots were quoted at 11½ cents a pound. Today olive oil quotations are so nominal as to have little significance. Those who are in need of the material seem to be willing to pay practically any reasonabe price as long as they can get quantities large enough to be useful,—a "reasonable price" being in the range between $3.50 and $4.00 a gallon. Olive foots, during the same period, rose to a market level of 16¾ cents a pound.

It goes without saying that, at these prices, American soapers in general, even those who formerly used olive oils in soap making, are not pouring them generously into their kettles. There are, naturally, a few soap makers, specializing in the manufacture of products containing olive oil, who are continuing to use olive oil. These few companies are metering out their supplies with the greatest care in an effort to make them last as long as possible. Practically all the available stocks are in the hands of the companies in question. A few have stocks of olive oil equal to about a year or 18 months' supply. Others have enough olive foots to satisfy their own needs for almost two years, it is estimated. But apart from a small number of companies, soapers and other industrial users have little or no stocks on hand.

What will happen if existing stocks are exhausted before new supplies become available? In those specific cases where substitutes cannot be employed because of labels, trade names, packages or traditions which imply an olive oil content, probably not even those concerned know the answer. They are keeping their fingers crossed and hoping such a contingency will not arise.

Hope has been expressed in certain quarters that a barter agreement between the United States and the Franco government of Spain might open a fresh source of olive oil. There are many difficulties involved, however, which make such a possibility appear very slim. Under such a barter agreement, it seems, American firms would be required to deliver at Spanish ports materials such as peanut oil and soyabean oil before Spain would release equivalent quantities of olive oil. The risk would obviously be great under these conditions and it is unlikely that exporters in the United States would be willing to take the chance. In sending barter materials to Spain there would always be some likelihood of losing them completely. Due to Spain's precarious political position, such materials might be confiscated before the trade had been completed and before olive oil shipments were on their way to the United States.

Then too, even if olive oil did come from Spain under a barter agreement, the quantity involved would undoubtedly be too small to affect the stock problem in the United States to an appreciable extent. This view is supported by recent authenticated statements that no sizeable stocks exist in Spain. That country, as well as most European countries, is hard up for glycerin as a munitions material. Consequently, green sulfur oil and all other inedible glycerin-yielding products are going into the manufacture of glycerin as rapidly as possible. Thus there appears to be little prospect of relief from that direction.

WHAT, then, are industries in the United States doing to get around the shortage? Substitutes, adulterants and replacement materials are supplying the answer.

By far and away the most important use of olive oil foots for many years has been in the manufacture of soaps. And soaps made from olive foots have found their greatest application in the textile field. Soaps made from olive oil foots played an important part for years in many branches of the textile industry. In fact it was once said that soaps were the most important thing in textiles. Olive soaps were used for wool throwing, for "boiling off" or degumming silk, for silk dyeing, for dyeing cotton goods or to brighten certain colors after dyeing, for calico printing, and for many other operations in the wool, silk and cotton industries. More recently, they also have been used extensively in the manufacture of rayons and acetates.

In this last-named field, olive oil soaps are still being used as they perform much more effectively than any other product which has been developed for the purpose and are used in such relatively small quantities that their price has practically no effect on the cost of the finished material. Even if the price of olive oil foots were two or three times what it is today, soap made from it would still be used by the rayon and acetate industries.

Generally speaking, however, such is not the case in other branches of the textile industries. Soaps have gradually lost the strong position they once held, and other detergents have come to the fore. In operations where olive foots soaps were once used almost exclusively, soaps made from combinations of cheaper oils have come into general usage and these in many cases have been supplanted by non-soap products. A large majority of operations which formerly employed soaps today rely upon other materials.

So many substitutes and replacement materials for olive oil have been developed as a direct result of its high price that olive oil is no longer as necessary as it once was in many industrial operations. For certain applications, olive oil is satisfactorily replaced by teaseed oil, for others by combinations such as rape oil and lard oil, or non-oxidizing mineral oil and peanut oil, or castor oil, pine oil and saponified red oil. Many synthetic products also have been brought out as substitutes for olive oil. Several of them, according to claims made by their manufacturers, have the same physical and chemical properties of olive oil and have the same chemical constitution. All these materials are considerably cheaper than olive oil.

It is probably true that none of the oils, combinations of oils, or synthetic products which have been developed are 100 per cent equivalents of olive oil. They are not quite as good, perhaps, but considering the difference in price, they do answer

the purpose. In certain industrial processes, the degumming of silk, for example, use of other products than soaps made from olive oil or olive foots results in higher wastage of textile.

In the degumming of silk, it is essential that the soaps used penetrate the silk fiber rapidly and wash out rapidly afterwards. In other words, they must be easily soluble in water. They must not possess added colors else they might stain the silk, and in order to prevent the development of unpleasant odors in the silk, degumming soaps should not in any way have a tendency to go rancid. Excess alkali must not be present. Soaps made from olive oil and olive foots perform very satisfactorily in this process, with a minimum of waste. With soaps made from other oils, the silk produced is usually less lustrous and the wastage is apt to be greater. However, when the price of olive oil goes beyond a certain point, silk producers can operate more economically by using less efficient materials even though a greater amount of silk is wasted.

For the time being, at least, the silk industry is defunct but the same general principle applies to many other operations in the textile industry. That is to say, when the waste or loss in dollars is less than the saving effected through the use of a cheaper agent, it is profitable to use the cheaper agent.

While, as mentioned before, it is probably true that no olive oil substitutes are just as good as the real thing itself, still improvements are being made in them every day. For many industrial operations, the replacements are so favorably looked upon that there would be no necessity for reverting to olive oil products even at a lower price level. If the substitutes are working all right, are cheaper, steadier in price, easier to obtain, why, producers reason, should we change back to olive oil products when the price drops?

Each time the price of olive oil has gone up, substitutes and replacements have gained ground. This process has been going on ever since the last war when olive oil could not be obtained for love nor money. Manufacturers were forced to find other types of products which worked, and they have been finding them from that time on.

Olive Oil Imports—Soap Use (1932-1940)

	IMPORTS		USE IN SOAPS	
	commercial olive oil	*olive foots*	*commercial olive oil*	*olive foots*
	pounds	*pounds*	*pounds*	*pounds*
1932	12,847,000	45,909,000	1,912,000	30,877,000
1933	16,509,000	40,468,000	2,001,000	31,878,000
1934	9,670,000	36,166,000	1,953,000	30,411,000
1935	19,743,000	33,797,000	1,690,000	31,507,000
1936	12,045,000	17,401,000	1,634,000	23,965,000
1937	4,870,000	22,101,000	890,000	17,984,000
1938	5,444,000	22,356,000	1,299,000	15,013,000
1939	11,304,000	28,180,000	1,439,000	19,068,000
1940	5,136,000	24,480,000	1,637,000	14,948,000

From government statistics showing the amount of olive foots going into soap manufacture for successive years, the trend can be noted. In 1931, roughly 39 million pounds of olive foots were used in soap making. The trend was steadily downward all during the '30's, and in 1940, only 15 million pounds of olive foots went into the soap kettle, much less than half the figure of only nine years before. Partly responsible for the drop in importance of olive foots to the soap industry has been the growing importance of soapless detergents to the textile field. Sulfonated oils, sulfated fatty alcohols, products such as "Igepons," and other such synthetic products are finding wider use.

It is well known what has happened during recent years as far as olive oil castile soap is concerned. This year even more profound changes will take place, it is certain; the number of soap brands containing olive oil, the percentage of olive oil in those brands, and the grade of olive oil being used will all, of necessity, have to be lowered. Many companies now in the business of making true olive oil castiles are using higher percentages of lower grades of olive oil such as acid oil, where once it was the practice to use denatured or commercial olive oil almost exclusively. Naturally at this time, unless it is stated or implied that a castile soap contains olive oil, doubtless it contains little or no olive oil.

As for the olive-palm toilet soaps, the same thing is true. The percentage of olive oil in these soaps has very probably been cut repeatedly during the past two years. Even the largest producers of this type of soap, who have been stocking with olive oil at an accelerated pace since September, 1939, have reduced the olive oil content of their chief brands. They are interested in making their supplies last as long as possible and are bending every effort to preserving the reputation and popularity of the brands even if they are obliged to discontinue making textile soaps and all other soap products containing olive oil. Some soap companies have done this: sacrificed one end of their business in order to keep another end going.

The largest American producer of an olive oil-containing soap for public consumption several months ago discontinued a series of advertisements which stressed the olive oil content of its brand in a graphic manner. No longer so anxious to tell the world just how many teaspoonfuls of olive oil go into every cake, the company has changed its advertising sales story. Now emphasis is placed on the fact that olive oil and palm oil are the only oils from which the brand is made,—with nothing said about how much of each. Such a change is just one dramatic sample of the many changes all along the line that soap makers have been forced to make to adjust themselves to the present practical disappearance of further olive oil supplies.

Record SOAP OUTPUT

SINCE the first of the year American soap makers have been sitting on the business end of a buying wave which would make the recent department store silk stocking drive seem like a quiet afternoon in a country store by comparison. Soap sales reached a peak in the first half of 1941, according to figures just released by the Association of American Soap & Glycerine Producers, that surpassed by almost 20 per cent the previous six months' record—set in the second and third quarters of 1939. In the course of setting this record sales total, employment in the industry has jumped 15 per cent over the figure for a year ago, and payrolls now stand 30 per cent above the comparable figure for 1940. Stocks of soap making fats, put in by foresighted manufacturers to protect themselves against possible shortages, have been cut down sharply in their efforts to meet the demands of buyers in this unprecedented rush to store up finished soaps. Contributing to the buying wave has been a vast increase in demands by various government departments, but the bulk of the added business, it is thought, has been a result of wholesalers and retailers rushing in to cover their future requirements in the fear of rising prices and possible interference with future supplies of imported fats and oils.

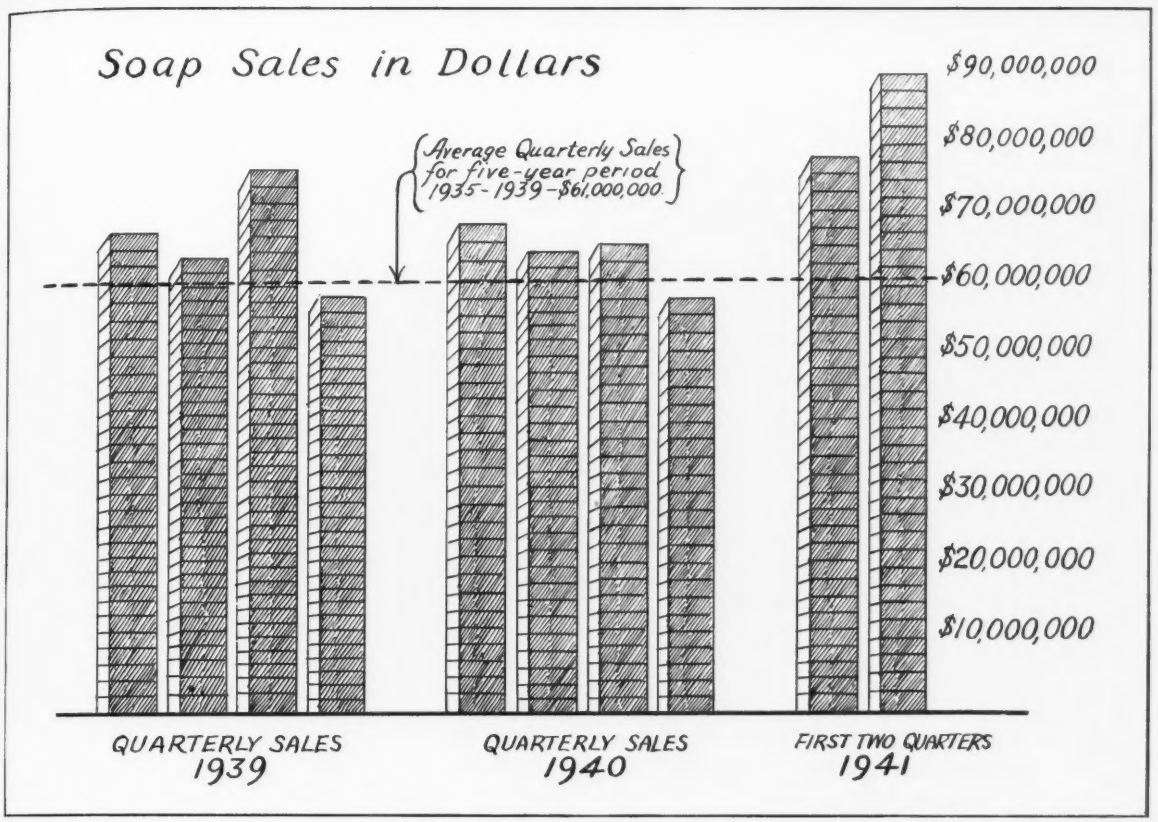
The buying wave, which just now begins to show some signs of tapering off, is one of those phenomena that soap makers have grown used to over a period of years,—only this time it has been on a larger scale. As one soap maker analyzed the soap buying cycle, "First you can't sell soap at all, then the wholesalers start to stock up, finally the orders are coming in faster than you can handle them and your customers are running your business. Then comes the drop off after buyers have bought and stocked all the soap they will need for the next six months." There seems to be some sign, as mentioned above, that the buying wave is abating a bit, as raw material suppliers begin to report that the demands made on them for speedy deliveries by their soap maker customers are easing up a trifle.

That the exceedingly abnormal sales of the past six or eight months must necessarily be followed eventually by some sort of a slump seems to be generally expected by the industry. It is just a question of when the slump will come and how serious it may be. Increased industrial activity and larger payrolls have unquestionably contributed to an increased soap consumption rate, and not all of the increased buying of the past eight months necessarily represents supplies going into stock. But just as unquestioned is the certainty that sales have been sharply exceeding even the higher current consumption rates, which can only mean that there must eventually be a reaction. Incidentally, on the basis of a survey of opinion among soap makers conducted over the past few weeks by the editors of *Soap and Sanitary Chemicals*, it seems to be their belief that the slackening off in sales will not come until early next year, if then.

The firms we have contacted seem to be in general agreement that the sharp increase in sales is directly traceable to stocking up by wholesalers and distributors in anticipation of higher prices. Huge government purchasing, they say, has been an important contributing factor, but far more important have been the sharp increases in forward buying by regular customers. As to whether or not wholesalers and distributors are retaining the heavy stocks, or whether they are getting down into the hands of retailers and consumers, there seems to be no general agreement in industry opinion. Perhaps the most accurate analysis comes from one soap maker who reports that wholesalers are stocking up heavily, that retailers have increased their stocks moderately, that industrial buyers have also added substantially to stocks, but that there has been very little abnormal stocking up by household buyers.

As to their own inventories the soap makers we have heard from report that they are "trying" to maintain even inventories, but we sense in their use of the word "trying" that it has been an almost impossible task over the past few months. Others state frankly that their own inventories have been sharply depleted and that they are now producing on an approximate sales basis and trying to build a limited stock.

In their opinions on the future sales outlook there is considerable division of opinion, and in some cases, perhaps, a tendency to adopt a rather optimistic view. Says one soap maker, "Sales should be normal for the balance of the year." Says another, "We anticipate some



leveling off of demand, but no drastic decline over the balance of 1941." A similar opinion is expressed by a soap powder manufacturer who says, "Business should maintain itself for the next few months, tapering off about November." A less optimistic view is taken by another soap maker who says "Soap has never sold at this rate before, and there is no reason to assume that recent levels of production and sales can long continue. We will eventually pay for this abnormal buying splurge with a drop to levels equally subnormal."

A more lengthy statement comes from the head of a midwestern firm who says "Barring another wave of buying in anticipation of still higher prices, soap sales over the next few months should more nearly approximate soap consumption, which will undoubtedly be some greater because of increased industrial activity, higher payrolls, etc. The soap manufacturer should expect reasonable business and secure his reasonable proportion. There will of course come a time when he will have to pay for the past six months' excellent business, and that time will be when the tendency is toward reduced inventories. This will come with decreased industrial activity, lower payrolls, etc., so that the combination may be expected to give six months to a year of markedly lower soap sales."

Soap sales in dollars as reported to the Association of American Soap & Glycerine Producers by member firms whose annual production they estimate at approximately 90% of the total output for the whole of United States.

TURNING to the actual figures, the report just issued by the Association of American Soap & Glycerine Producers shows a record total of 1,713,709,100 pounds of hard soaps delivered to customers by soap makers over the first six months of 1941, representing a sales value of $169,172,430. To this must be added 1,550,065 gallons of liquid soaps, valued at $1,186,854. These totals represent an increase of 19.3 per cent over the best previous half year's business ever reported,—the second and third quarters of 1939 when sales totalled $142,532,305. The 1941 first half figure was 26.3 per cent higher than that for the first half of 1940, and 36.3 per cent higher than for the second half of last year.

The figures indicate that the buying wave gained in volume in the second quarter of this year,—with total deliveries of soaps other than liquid for the April-May-June period amounting to 890,602,233 pounds, valued at $90,085,272. In pounds this was 38.1 per cent higher than the corresponding quarter of the previous year, 8.7 per cent higher than the first quarter of 1941, and 41.8 per cent higher than the average quarter from 1935 through 1939. In dollars the second 1941 quarter was 38.7 per cent higher than the corresponding 1940 quarter, 14.3 per cent higher than the first quarter of 1941, and 50.4 per cent higher than the

average quarter. The more-than-proportionate increase in the dollar figure gives an indication of the advancing soap price trend.

For liquid soaps, figures of manufacturers whose reports make quarter by quarter comparison possible, show the 1941 second quarter to be 28.2 per cent higher in volume than the corresponding quarter of the previous year, 28 per cent higher than the first quarter of 1941, and 61.6 per cent higher than the average quarter for 1935 through 1939. In dollars the second quarter of 1941 was 29.6 per cent higher than the corresponding quarter of the previous year, 20.8 per cent higher than the first quarter of 1941, and 53.1 per cent higher than the average quarter.

Looked at from another angle the figures indicate that in the first half of 1941 American soap makers shipped 65.6 per cent of the total sales of the entire year of 1940; 63 per cent of the total sales of the entire year, 1939; and 66.2 per cent of the total sales of the entire year of 1938.

The employment and payroll indexes issued by the U. S. Department of Labor reflect directly this sharp increase in soap industry activity. The soap industry employment index, which is based on the 1923-1925 average as the 100 point, lists employment in the production of soap for June, 1941, at 93.3. This compares with 92.2 for the previous month, and represents an advance of 15 per cent from the figure of 81.5 reported for June, 1940. Payrolls soared to a June, 1941, figure of 129.2 from 125.7 in May and 100.4 a year ago,—the gain over the period of a year being almost 30 per cent.

The result of this sharp increase in soap production and sales is also reflected in fat and oil statistics. Figures just issued by the U. S. Bureau of the Census for the second 1941 quarter report sharp increases in production of many soap fats. More than counterbalancing these production increases in most instances, however, are even sharper gains in consumption, with the result that stocks as of mid-year, 1941, show a general decline. On inedible tallow, for instance, of which almost 90 per cent of 1940 production found its way into soaps, production in the second quarter of 1941 jumped up to 202,000,000 pounds, as compared with 183,000,000 pounds in the second quarter of 1940. Consumption in the second 1941 quarter jumped even more sharply to 303,000,000 pounds, as against 211,000,000 pounds in the corresponding 1940 quarter,—with the result that stocks as of June 30, 1941, had fallen off to 289,000,000 pounds, as compared with 314,000,000 pounds on the same date last year.

In the case of crude coconut oil, 75 per cent of the supply of which went into soaps last year, production in the second 1941 quarter was 81,000,000 pounds, a drop from the total of 87,000,000 pounds in the corresponding 1940 quarter. Con-

(*Turn to Page* 65)

Total Dollars of Soap Sales—1935-1941

{ As reported to the Association of American Soap & Glycerine Producers. Estimated by them at 90% of American production. }

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Total*
1935....	$51,671,665	$56,448,919	$46,120,447	$47,882,464	$202,123,495
1936....	51,290,759	54,380,011	67,700,571	55,317,139	228,688,480
1937....	72,602,282	58,356,085	65,141,802	52,598,442	248,698,611
1938....	67,131,410	64,327,646	67,891,851	57,388,908	256,739,815
1939....	68,342,449	64,735,457	77,796,848	59,068,968	269,943,722
1940....	69,146,084	65,438,221	66,191,864	58,487,126	259,263,295
1941....	79,338,189	90,695,465			

SOAP FAT PRODUCTION—CONSUMPTION—STOCKS (2nd Quarter 1941)

Oil or Fat	*Factory operations for the quarter ending June 30, 1941 and 1940* — *Production (1,000 pounds)*		*Consumption (1,000) pounds)*		*Factory and warehouse stocks June 30, 1941 and 1940 (1,000 pounds)*	
	1941	1940	1941	1940	1941	1940
Coconut oil	81,054	87,781	184,118	151,758	176,381	202,227
Soyabean oil	141,584	120,623	144,709	115,267	34,909	41,862
Olive oil, inedible	———	———	835	1,735	1,546	3,718
Sulfur Olive oil	———	———	2,846	4,182	14,816	17,620
Palm-kernel oil, crude	———	———	3,201	2,249	4,114	808
Palm oil, crude	———	———	73,141	35,562	115,134	131,616
Babassu oil, crude	12,475	18,785	16,084	17,917	5,396	8,393
Tallow, inedible	202,264	183,150	302,985	210,818	289,338	314,256
White grease	30,238	26,369	39,885	27,573	26,385	45,674
Yellow grease	31,138	28,105	53,539	35,116	53,876	40,586
Brown grease	24,035	19,328	14,425	12,460	13,172	16,423
Cottonseed foots, 50% basis	30,014	23,617	32,372	25,816	20,193	15,901
Cottonseed foots, distilled	10,118	7,996	6,862	6,053	3,312	2,871
Other vegetable oil foots, 50% basis	30,036	21,487	20,466	14,756	4,834	3,884
Acidulated soap stock	14,580	10,275	17,571	12,634	24,697	31,955

Perfuming Materials . . .

a review of the current supply situation

"NO matter how scarce the usual perfuming materials become, soap makers will always have something to use in their place."

This remark, made recently by one of the foremost suppliers of essential oils and aromatic chemicals in the United States, just about sums up the present outlook on perfuming materials for toilet soaps. Just what materials will be available was not stated in detail, naturally, for the situation is changing too rapidly to make it possible to predict accurately what will be obtainable tomorrow. A statement about supplies of any specific perfuming material which might be true one day often becomes untenable the next as new developments unfold in the national and international mix-up. Here today and gone tomorrow,—is apt to be true of many a natural oil, isolate or synthetic used in perfuming toilet soaps. The perfume chemist no sooner concocts a substitute to replace disappearing supplies of a natural oil than supplies of the substitute itself become short, and he must go to work and dream up a substitute for the substitute,—and so on and so on.

There is hardly an item in the long list of essential oils and aromatic chemicals used in soap scenting that has not become more difficult to obtain since the European war began. Country after country has been eliminated as a source of supply of perfuming materials for the United States, until in all of continental Europe only Spain remains as a source of a few materials, and an uncertain one at that. Northern Africa was removed from the picture as campaigns were pushed into that area. Asiatic oils became more difficult to obtain as Japan's sphere of aggression was widened. South American products were made scarcer in the United States by the general shortage of shipping.

In fact, every imported material brought to the United States by water has become increasingly difficult to replace. Add to this the increased demand for such materials induced by the 1941 buying wave, and the shortage of intermediate chemicals used in the manufacture of synthetic aromatic chemicals, and there is the perfuming material situation in a nutshell. A recent development,—the placing of formaldehyde on 100 per cent priorities by the OPM, and the requirements of the defense program on items such as benzaldehyde, acetic anhydride, solvents, etc., have brought many supply shortages and price rises among the ordinarily more stable aromatic chemicals.

Without the skill and experience of the perfume chemist, users of perfuming materials would be in a much more difficult position than they are at the present time. Suppliers and users of these products for a long time had been anticipating the day when their usual sources of supply would be cut off. Research and experimentation supplied them with imitations and new synthetics which could be used whenever it became necessary. Great advances have been made in preparing synthetics and compounds which closely imitate the odorous characteristics of oils such as bergamot, ylang ylang, geranium, pine needle, lavender, orris, and other hard-to-get natural oils.

Changes in formulations of soap perfumes have been necessary frequently in recent months and undoubtedly more will become necessary in months to come. The substitutes are not always as good as the originals, but they fulfill their purpose and, in most cases, the general public cannot detect the difference. As long as the imported natural oils are short, substitution and more substitution will be the order of the day.

Some authorities feel that the situation will be relieved when the interned shipments of essential oils at Bermuda are released by the British government for delivery to the United States. These shipments have been accumulating at the British prize court at Bermuda and may represent sizeable quantities of certain of the scarce oils. Just how much is stored there is not known with accuracy, though estimates have placed the total worth of the essential oils there at between $200,000 and $1,000,000. But even when these shipments are released, it is probable that the general picture will not be affected much as the firms to which the oils were consigned undoubtedly have long since reserved them for regular customers.

The present outlook on a number of specific essential oils is outlined below.

Bergamot Oil

Small quantities of natural oil of bergamot are still being sold by a few suppliers, but many of them are not offering the material. Those who have any to sell mention prices ranging around $20.00 to $22.00 a pound and higher. Before

Conquest of France, center of the world's essential oil industry, has demoralized the perfuming material market. American buyers have been cut off from their normal source of supply for perfuming materials and the French essential oil producers divorced from their largest market.

the beginning of the war, in August, 1939, natural oil of bergamot in 25-pound coppers was selling at $3.65 a pound. But as soon as war broke out and it began to look as though exports from the producing area would be affected, the price started its upward movement, and was advanced periodically all through 1940, taking a sharp jump to about $12.00 in November of that year, rising to its present level during the first part of 1941. The only producing region is in the southern part of Italy so, like most other commodities from the Mediterranean area, natural bergamot is no longer obtainable. The small stocks of this excellent soap perfuming material which remain in the United States are being held closely. Its use in soap, at present, needless to say, is less than insignificant.

In its place, essential oil houses are offering imitations of all grades, some of which contain a fair percentage of the natural product and some of which contain none at all. Depending on the amount of real bergamot oil contained, prices range from $2.95 up to as high as $8.00 or $9.00 a pound. The demand is high for these artificial oils. They are advancing in price with the possibility of acute shortages later on. Many of the imitations being offered are extremely good substitutes for natural bergamot, and in certain formulations even the trained nose of a perfume chemist cannot distinguish them from the real thing. However, supplies of the extra fine qualities are diminishing.

An important factor figuring in imitation bergamot oil manufacture is linalyl acetate. All aromatic acetates are very short because of the lack of acetic anhydride for civilian applications. This, together with the fact that the most convincing artificial bergamots contain some natural oil, makes it probable that the better imitations will continue to become higher and scarcer, and further substitution of their ingredients will become necessary.

Oil of Bois de Rose

Where obtainable, oil of bois de rose Brazilian is currently selling for prices in the neighborhood of $3.50 to $4.00 a pound depending on quality and seller. However, many houses report the material as completely unobtainable. As for the superior Cayenne article, virtually none has been on the market since the beginning of this year. Cayenne bois de rose is normally produced in French Guiana but culture of the trees from which it is made has been discontinued, according to report, because export markets of the country have been cut off by the war. Any small quantities of the oil now available in the United States would command a price of about $10.50 a pound. For comparison, in August, 1939, both Cayenne and Brazilian oils were quoted near $1.50 a pound.

An extremely high export tax which has been placed on Brazilian bois de rose by the Brazilian government, in addition to the tight shipping situation, have brought on the present scarcity of the item. Stocks in the hands of dealers are being held closely, and sellers of replacements are also holding to strong, high-priced views.

Inseparably linked to the bois de rose shortage is linalool which is an isolate of oil of bois de rose. Present prices for the chemical range from $5.00 to $7.50 a pound as to

quality and seller. Many dealers, however, are out of linalool and have nothing to offer. If or when neither bois de rose nor linalool can be obtained any more, perfumers will have to get along without them in compounding.

Oil of Citronella

Present high prices on the citronella oils, from 85 cents to a dollar for the Java oil, and 95 cents to $1.50, nominal, for the Ceylon material, seem to be ascribable in part to speculative activity in producing regions. Advancing prices in the United States are in keeping with rising quotations from producing regions. There are rumors that shipments to the United States may be stopped, but to date, shipments are still coming through. Actually there seems to be no real basis for the high costs of the oils. The Ceylon oil particularly is purely nominal due to the fact that there are no firm offerings and because of exceptionally high prices being cabled. Pre-war quotations were 27 cents a pound on the Java oil and 31 cents on the Ceylon.

Naturally the isolates derived from the citronella oils are being affected by scarcity of the natural materials. Citronellal, citronellol, second grade geraniol, artificial menthol and hydroxycitronellal are all produced from citronella Java. Among these, hydroxycitronellal is especially scarce, not because of the high cost of the natural oil but primarily due to the shortage of formaldehyde which is used in its manufacture. Hydroxycitronellal is so scarce that prices on it are not being quoted by dealers generally. When available, it is reported, price is between $3.00 and about $5.00 a pound. Chemicals similar to hydroxycitronellal in properties for use as a perfume base are now being offered by several aromatic chemical houses.

Oil of Lavender

Like other French floral oils, lavender, U.S.P., is very short, regardless of ester content. Very small quantities might possibly be purchased for a price not far from $12.00 a pound. In August, 1939, prices ranged from $2.00 to $4.75. Spike lavender, too, has been advanced considerably since the war began. Current prices range from $2.60 to $3.25 as compared with the pre-war level of $1.05 to $1.10. The rise in this case has not been as pronounced as with other imported oils since trade with Spain, the producing country, has not been arrested completely. Supplies of oil of lavender spike in the United States are said to be narrow and replacements from Europe are continually growing more uncertain.

Coming back to oil of lavender,—although the natural oil is off the market to all intents and purposes, all kinds of imitations have appeared, in a great range of grades and prices. Quotations on the imitations have been advancing. They are currently $3.00, $3.45, $3.50, $4.25, $4.50, $4.95 and $5.00 a pound to list the prices of a few. Some "synthetic" lavenders are said to be highly satisfactory substitutes for the genuine material while others are very poor. Quality depends on cost, in most cases. It is possible to buy artificial lavenders at much lower prices than those quoted, even as low as $1.50 or $2.00, but in these the likeness to true lavender is hardly striking, to say the least. Like good artificial bergamots, good artificial lavenders contain linalyl acetate and frequently a certain amount of real oil of lavender. Thus—the currently advancing prices.

Oil of Geranium

Imitation oils of geranium constitute another group of artificial products which have been brought into prominence by the scarcity of the natural material. Natural oil of geranium Bourbon is worth $17.00 to $18.00 a pound at present, while the African grade is quoted about a dollar a pound lower. These spot prices have no significance, however, as only very small quantities are available and leading dealers are supplying only the regular consuming trade with what little they have.

As the imitation geraniums are based mainly on imported materials and synthetic aromatics, both of which are becoming scarcer, the imitations are also advancing in price. Plenty of cheap artificial geraniums are on the market at low prices. Grades vary widely, products of leading manufacturers selling variously at $2.80, $3.25, $3.50, $3.85, $4.00, $4.50, $4.90, $5.00, $5.50, and $7.50 a pound. At least one of the imitations selling at $7.50 contains 40 per cent of the natural product.

Rhodinol, which is prepared principally by the fractionation of Bourbon geranium oil, has also virtually disappeared from the market. There are all grades of this product. They vary according to source and purity. The best grades are selling from $30.00 up to as high as $57.00 a pound. One seller, who was recently quoting his product at $24.00 a pound, in pound lots, was asking higher prices for larger lots. Of course there are imitation rhodinols currently for sale. These are merely compounds and contain little or no real rhodinol. They sell at about $9.00 a pound.

Geranium oil, it has been reported, is now coming to the United States from the Belgian Congo. If sizeable shipments can be brought from that country, the supply picture may be relieved somewhat.

Siberian Pineneedle Oil

A few dealers are still quoting prices on Siberian pineneedle oil, but in general, spot stocks are about exhausted. Supplies have been shut off as a result of the Russo-German conflict and the steady demand for the material has made it extremely short. Quotations are nominal, accepted prices being in the neighborhood of $2.00 a pound. Naturally, demand for domestic replacements is reaching new heights. Spruce and hemlock oils are commanding a fair amount of attention and the aromatic chemicals, isoborneol and isobornyl acetate are in demand. Manufacture of the latter, due to the acetic anhydride shortage, is hampered and deliveries are slow.

(*Turn to Page* 63)

Notes on
WATERLESS CLEANSERS

By C. A. TYLER, Ph. D.

A DEVELOPMENT of the motor age, "waterless" hand soaps were the expression of an idea which never came into full fruition. These products are not to be confused with mechanics' hand soaps, of which over 500 examples demonstrate commercial success; the latter are soaps carrying abrasive for the removal of occupational and other soil unusually difficult to wash off. Mechanics' hand soaps are always applied with water and are followed by rinsing, which is especially necessary in order to free the hands of insoluble abrasive.

Waterless hand soaps, on the contrary, are designed for use at times when no water supply is available. They are intended to do the complete job of washing and cleaning by themselves. No doubt they first appeared on the scene many years ago when motorists found their cars subject to sudden and unexpected breakdowns, and their tires to blowouts, in all sorts of inconvenient spots. Having made some sort of repair himself, supposedly the motorist would dig out his can of special soap to get the grease and grime off his hands before continuing his journey. That this type of soap is little known today can perhaps be attributed to two reasons. With the increase in the production of cars, more and more services and conveniences have been offered the motorist, particularly in the United States. Lack of running water and free soap would normally be the last of the motorist's worries.

The other reason besides lack of demand lies in the nature of the product itself. A product to be used without water must be one of great dilution so that only a small amount of active ingredient will remain on the hands in the absence of rinsing. This also means that a relatively large amount of product must be used in order for it to do any real cleansing. Packed in a container of ordinary size, the material would quickly be used up, probably lasting through not more than three or four applications.

For motorists, then, waterless soaps can be considered pretty much of a flop. The question may arise at this time as to whether troops in the field and on manouvers might find use for these soaps. Perhaps that is something to be looked into, and if so, a word about such products is not amiss.

As usually made, waterless hand soaps are so simply prepared that but little experience and technical knowledge are required. Ordinary white soap chips are dissolved in hot water, run into containers, and allowed to set to a gel. The chips most used consist of soda soap having a fatty-acid content of 75 per cent tallow to 25 per cent coconut oil.

They usually carry a slight odor of citronella, so slight that the soap is considered "odorless." So characteristic has this odor become that many of the lay public consider it the natural odor of soap. The concentration of the soap is usually just about enough to form a gel. Since the product is to be used without water, there is good reason to keep the soap concentration low, approaching to some degree the more normal conditions of washing the hands. About 3 per cent of soap is the usual concentration.

Packing is ordinarily in plain friction-top tin cans, similar to those used for paste hand soaps containing abrasive. Since the can costs more than its contents, the main factor in determining the size is not related so much to the cost of the soap, as to convenience to the purchaser. How big a container can the user pack and handle easily? How long does he want one container-full to last? A proper balance between these two considerations needs to be found.

No doubt many variations have been made from the simple basic formula given. A more complex product for the purpose is described in a French patent as follows:

	Per Cent
Agar-agar	0.2
Psyllium	0.3
Glycerin	5.0
Soda ash	5.0
Soap	5.0
Ammonia	2.5
Javel water	0.5
Water	81.5

The first two ingredients are emulsifying and jelling agents. Glycerin is included as a hygroscopic agent to keep the product from drying out. Soda ash, of course, is a soap builder increasing the alkalinity of the product. Ammonia has some cleaning action, while Javel water is a bleach and antiseptic, although in this dilution it would be too weak to mean much.

Also intended to be used in this way are products more in the nature of dry-cleaners' soap, these apparently having found some acceptance in Germany. One such waterless hand soap contains ammonium oleate dissolved in naphtha, enough soap being present to give

The necessity of cleaning up after emergency repairs on the road was supposed to provide a substantial market for waterless cleansers, but fewer breakdowns, better motor service, and shortcomings of the product itself have limited the market for such cleansers sharply.

the mixture a jelly-like consistency. Such soaps have been packaged in tubes, from which the soap can be squeezed much the same as shaving soap.

A similar soap described in a German patent as suitable for use on the hands contains partially saponified stearin or palmitin, and a chlorinated hydrocarbon solvent such as carbon tetrachloride. Naphtha and carbon tetrachloride both aid in the removal of greasy soil. Carbon tetrachloride is questionable for this purpose, however, both because of its high cost and because of the toxic nature of its fumes. The odor of naphtha, which would cling to the hands, is usually considered objectionable.

In England it was suggested as far back as 1939 that soap pads—that is, flannel pads impregnated with soap—might prove useful under wartime conditions.[1] Perfumed cleansing pads have attained some success with the feminine public, although still in the class of the sundry small luxury items with which the female of the species likes to fill her handbag and dressing table. A suggested formula for more general use is based on 1-2 per cent of fatty alcohol sulfate as the active ingredient in the impregnating agent. With this in aqueous solution are also dissolved 20 per cent of a hygroscopic agent such as glycerin or diethylene glycol, and a small amount of boric acid. Such a liquid would be practically neutral in reaction. It would be non-irritating to the skin; the glycerin should have a soothing effect.

An absorbent cleansing cloth described as re-usable, depends on alkaline salts for any cleansing action it may have.[2] The cloth is impregnated with a solution containing trisodium phosphate and borax, with glycerin as hygroscopic agent. The borax would reduce the alkalinity of trisodium phosphate, the extent depending on the ratio selected. It is highly questionable whether such a mixture would have any cleansing action, although the German literature of today is full of formulas for such mixtures of alkaline salts to serve various detergent purposes. Trisodium phosphate, although a good soap builder, is not primarily a detergent. Borax is not a cleanser and is not a builder, but merely a buffer salt giving a slightly alkaline pH.

Conditions in the United States are so far along on an emergency basis, that one wonders what to prepare for and how. Possibly old forms of products will find new uses; possibly new forms can be found which will meet special needs. Soap, whether in old guise or new, remains one of our primary necessities.

[1]Joseph M. Vallance. *Soap, Perfumery & Cosmetics 12*, 909-12 (1939).

[2]Paul A. Woronoff, U. S. Patent No. 2,093,824.

—— ♦ ——

Electron microscope photographs of a curd of pure sodium laurate show that it consists of a mass of fibers which are thin ribbons whose widths tend to be integral multiples of approximately twice the length of the sodium laurate molecules. The fibers branch to form a felt, which accounts for the rigidity of the curd. The fiber junctions also give rise to many capillary spaces of variable diameter in which water can be retained, even at a very low relative humidity. Some of the sodium laurate apparently is not a part of the fibrous structure but is present as granules 100-200 Angstrom units in diameter, spaced irregularly along the fiber. L. Martin, J. W. McBain and R. D. Vold. *J. Am. Chem. Soc.* **63**, 1990-3 (1941).

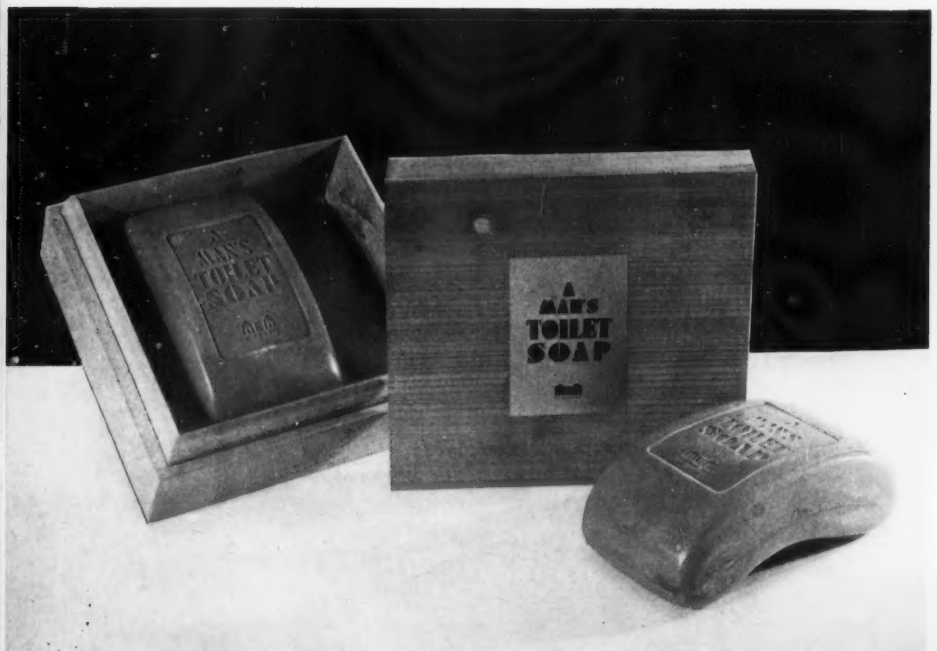
—— ♦ ——

Wheat flour is stirred into a hot saturated solution of sodium chloride until a thick paste is secured. The mass is cooked in a closed vessel in the presence of formaldehyde, a mineral color and amyl acetate. The product is a thick, kneadable mass suitable for cleaning floors, walls and wallpaper. Leo Kummer. Swiss Patent No. 210,171; through *Chem. Abs.*

New Products and

Cloe's Bleach, product of Blecho Co., Los Angeles, has recently gone through a package modernization treatment. Label has been cleaned up and a Phoenix metal cap replaces the rubber stopper. Heetfield photo.

Shulton, Inc., New York, have introduced a new package style for the 1941 Christmas shopping season—the Band Box. Carrying a cake of toilet soap, toilet water, atomizer and talc, it is designed for later re-use.



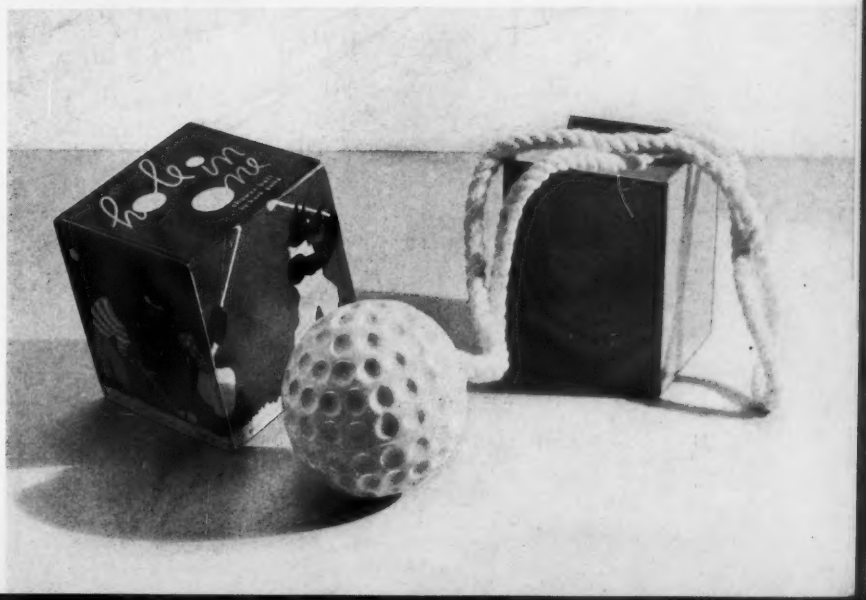
Mem, Inc., New York, has just brought out a new line of men's toiletries which includes a toilet soap in pine or sandalwood odors. Two cakes, shaped to fit the hand in a cedar box.

Packages

"Slick Shine" polishes, made by Slick Shine Co., Newark, N. J., have been repackaged in containers which feature the Williams "Kork-N-Seal." The "Slick Shine" line includes stove polish as well as the metal polish shown.

Novelty measuring cup top is highlight of new American Beauty Bubbles container recently put on market by Luxor, Ltd., Chicago. Container by Ritchie, Chicago, uses a graceful rose design on white background.

Steady, year-round demand is reported by Kerk Guild, New York, for their "hole in one" soap on a rope, designed by Lester Gaba for shower use. Pine and lilac odors are made.



Raw Materials

for the soap and allied industries

RED OIL

CAUSTIC SODA

Every raw material necessary for the manufacture of soap and allied products is carried in stock and is available at the right price for immediate delivery to your door.

STEARIC ACID

CAUSTIC POTASH

PALMITIC ACID

90-95% Pure White, High Melting Point

GLISYN

Inquiries solicited on this low price glycerine replacement.

ALCOHOL
AMMONIA
BLEACHING POWDER
BORAX
BICARBONATE OF SODA
CARBON TETRACHLORIDE
CALCIUM CHLORIDE
CAUSTIC SODA
CAUSTIC POTASH
DYES
DISODIUM PHOSPHATE
GLAUBER'S SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID - RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
SOYA BEAN OIL
SESAME OIL
TEASEED OIL
WHITE OLEINE
FATTY ACID
STEARINE
STEARIC ACID
GREASE
TALLOW

TALLOW

DRUMS
TANK CARS
TANK WAGONS

Telephone: MOrsemere 6-4870. Direct New York Tel.: CHickering 4-7533.
Members New York Produce Exchange.

COCOANUT OIL

Animal Oils, Fats, Chemicals Vegetable Oils,

EASTERN INDUSTRIES iEi INC.

RIDGEFIELD· N. J.

NEWS....

Foundry Buys Old Luckel Plant

The site of the old Luckel King & Cake Soap Co., Portland, Ore., was recently purchased by Western Foundry Co., same city, for construction of a new $50,000 foundry building.

Vick Buys Seaforth Line

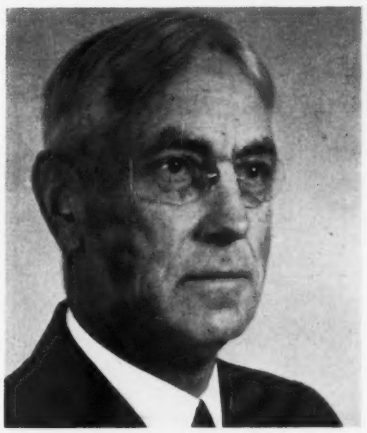
Vick Chemical Co., New York, recently purchased financial control of Alfred D. McKelvey Co., manufacturer of the "Seaforth" line of men's toiletries, as its second major acquisition during the past month. Vicks had just previously announced the purchase of Prince Matchabelli, Inc., New York, perfumes and toilet preparations. In neither case are policy or personnel changes being contemplated. It was said, however, that the McKelvy organization would be built up and expanded. Alfred D. McKelvy, who originated the line, will remain as president of the company he founded less than two years ago.

Mennen Leases Warehouse

Mennen Co., Newark, recently leased a three-story building of 25,000 square feet for the storage of raw materials and warehousing of finished merchandise. Address of the building is 1168 Broad street, Newark, N. J.

Russell Colgate Dies

Russell Colgate, a director of Colgate-Palmolive-Peet Co. and formerly chairman of the board of Colgate & Co., Jersey City, died of a heart attack July 31, while playing tennis with three friends on the court at his home in Llewellyn Park, West Orange, N. J. He was sixty-eight years old. Mr. Colgate was a grandson of William Colgate, who founded the Colgate Company in 1806. The son of Samuel and Elizabeth Colgate, he was born at Orange,



RUSSELL COLGATE

N. J. He was graduated from Yale University in 1896. Mr. Colgate was the last of five brothers to succeed to the control of the Colgate firm. His four brothers, all of whom are now dead, were Gilbert, Sidney, Colonel Austin M., and Richard. Russell Colgate served as an executive of Colgate & Co. until its merger with Palmolive-Peet Co. in 1928. He then retired from active service with the company. Mr. Colgate was a religious, social welfare and philanthropic leader, and was the first man to receive the honor of being named "First Citizen of the Oranges."

Soap Sculptors Win Prizes

Prizes amounting to $2,200 were recently awarded to over 100 winners of the seventeenth annual soap sculpture contest sponsored by Procter & Gamble Co., Cincinnati. The prize-winning pieces were exhibited to the press at a preview at the New York studio of Paul Manship, well-known sculptor.

A.C.S. To Hear Snell

Foster Dee Snell, consulting chemist, New York, is scheduled to speak before the division of colloid chemistry at the 102nd meeting of the American Chemical Society, which will be held at Atlantic City, N. J., September 8. Dr. Snell's address will be entitled "Surface Active Agents." In it the action and behavior of the new synthetic detergents, such as alkyl aryl sulfonates, will be summarized and contrasted with that of soaps.

Ungerer Returns To Duty

Fred H. Ungerer, head of Ungerer & Co., New York, perfuming materials, has just returned to active duty after recuperating from an abdominal operation. He is reported to be back in the best of health once more.

To Cut Carton Use

Manufacturers will be forced to make a 25 per cent reduction in use of cartons, fibre and corrugated shipping cases, direction booklets, and other card and paper materials in the packaging, shipping and distribution of all drug, insecticide, cosmetic, soap, and chemical products, according to an order which it is anticipated will be issued by the Office of Production Management, Washington, about the middle of September. This reduction in the use of cartons and other fibre and paper packaging materials is made necessary by the needs of the defense program and an estimated present shortage of some 800,000 tons of paper pulp for this and other needs. It is understood that the same ruling will apply to the foodstuffs and other industries.

Ways and means to bring about this 25 per cent saving were

discussed at a conference of trade association executives held at the Waldorf-Astoria Hotel, New York, on August 27 and presided over by Roy Peet of the Colgate-Palmolive-Peet Co., chairman of a special OPM Committee. Other members of the committee are J. Van Allen Clark of Allied Products, Inc., William Bristol, Jr., of Bristol-Myers Co., and W. J. Maget of Merck & Co. The committee will report its recommendations to the OPM on or before Sept. 8.

Ways suggested to save pulp and paper in packaging were outlined as follows: 1. Revise structure of cartons, boxes, etc., to get more out of a sheet. 2. Make shipping boxes returnable and arrange for their re-use on a wide scale. 3. Pack more units per case and make the cases of lighter stock. 4. Eliminate cartons, wrappers, booklets, circulars, etc., window and counter displays, etc., except where absolutely essential to the shipping and use of the product.

Oil Chemists To Meet At Chi.

Technical and scientific progress in oils, fats and soaps, and related materials will be reviewed at the annual Fall convention of the American Oil Chemists' Society which is to be held at the Drake Hotel, Chicago, October 8-9-10. The program will feature three groups of papers; a general group on soaps, a general group on oils and fats, and a symposium on analytical methods as applied to fats, oils and soaps. Among papers to be read are the following: a paper on soaps and other surface active agents by Foster D. Snell; two papers by W. D. Pohle, naval stores division, U. S. Department of Agriculture, one entitled "Foaming Properties of Rosin Soap and Their Comparison with Those of Fatty Acid Soaps," and the other "Solubility of Calcium Soaps of Gum Rosin, Rosin Acids, and Fatty Acids"; and a paper on a soap subject by Pauline Beery Mack, Pennsylvania State College.

Special entertainment for the evenings of October 8 and 9 is planned. A feature of the convention will be the industrial and laboratory exhibits.

Bronner Moves To Chicago

Emil H. Bronner, well known practical soap maker, and technical consultant to Allen B. Wrisley Co., Chicago, recently moved from Milwaukee to Chicago. His new address is 5652 South Christiana Ave. In telling us of his address change Mr. Bronner sent a picture of himself and his son whom he is rearing to be a soap maker, the first step being to overcome the usual juvenile objections to soap and water. Mr. Bronner reports that Milwaukee was the scene last month of a soap makers' party, when a number of practical soap men gathered informally to meet George Wrisley, vice-president and general manager of Allen B. Wrisley Co.

EMIL H. BRONNER AND SON

Export Control Covers Soaps

Soaps and toilet preparations, cleansers, dentifrices, disinfectants, fungicides, polishes, water softeners, and other chemical specialties were included in a new export control schedule, Schedule 17, recently issued which became effective August 29. With reference to chemical materials, the language of this schedule is all-inclusive, taking in every material not mentioned specifically by means of a designation such as this: "All other salts and compounds in addition to those listed in previous numbered export control schedules."

General licenses were issued by the Secretary of State for export to Canada, Great Britain and Ireland, and the Philippines of a number of articles under control August 27. These include pyrethrum powder or extract, tricresol phosphate and triphenyl phosphate.

McKeown Joins Mefford

J. C. McKeown, Pacific Coast representative for Colgate-Palmolive-Peet Co. until about a year ago, has joined the Mefford Chemical Co.'s sales organization in Los Angeles, Calif., and will specialize in bulk soap sales in that area.

Continental Sales Changes

G. E. DuCharme has been appointed acting local sales manager of the Jersey City sales territory for Continental Can Co., New York. In the Wheeling district, J. H. Bebee has been appointed assistant local sales manager. In the central district R. H. Cotter has been appointed local sales manager with headquarters in St. Paul.

Gardner-Richardson Elects

The board of directors of Gardner-Richardson Co., Middletown, Ohio, carton manufacturer, recently elected C. L. Keller, a board member, as chairman of the board to fill the position left vacant by the death of J. M. Richardson. At the same meeting, Robert R. Richardson was elected to fill the board vacancy, and was named secretary of the company. W. E. Sooy was elected a vice-president and E. T. Gardner was elected assistant to the president of the company.

Mich. Alkali Moves Offices

The general sales offices of Michigan Alkali Co., formerly located at New York, at 60 East 42nd street, were moved on August 18 to Detroit. New address of the general sales office is the Ford Building, Detroit.

Colgate Profit in Sharp Gain

Earnings of Colgate-Palmolive-Peet Co. jumped to $2,635,051, or $1.21 a common share for the first six months of 1941 according to the semi-annual report to stockholders just released by E. H. Little, C-P-P president. This compares with a net of $1,278,230, or 45 cents a common share for the corresponding period last year. Net sales for the most recent six months period amounted to $54,904,926, as against $45,093,118 for the first six months of 1940. The company has set aside a total of $3,200,000 to provide for income and excess profit taxes in its operations for the first half of 1941. This is estimated at a million dollars more than would have been provided under the 1940 revenue act.

Invents Non-Slip Soap Cake

Charlton Wallace, Jr., bridge editor, Cincinnati Times-Star, has invented a cake of soap for which he has received U. S. Patent 2250318. It is an oblong cake with two deep crosswise corrugations, with a flange closing the ends of the grooves of the corrugations to form suction pockets between the ridges, producing a sort of non-slip cake.

Herb Farm Signs Stipulation

The Herb Farm Shop, Ltd., New York, soaps and toilet preparations, has signed a Federal Trade Commission stipulation agreeing that in future advertising it will cease using references which imply without basis that its products have an English or other foreign origin.

C. S. A. Golf Winners

The third golf tournament of the Salesmen's Association of the American Chemical Industry, held at the Montclair (N. J.) Country Club, August 12, resulted in the following winners:

Class A, members, low gross, R. C. Quortrup, of Barrett Co.; Class B, Walter Buhler, of Barrett Co; Class C, T. F. Callahan. Low net, Class A, R. M. Stevenson of Givaudan-Delawanna, Inc.; Class B, Peter Reilly, Jr., of Tar & Chemical Co.; Class C, W. Richards. Guests, low gross, J. J. Rush, of Newburg Chemical Co.

The Salesmen's Association 20th Anniversary Party will be held September 5-6-7 at Buckwood Inn, Shawnee-on-the-Delaware, Pa.

Stop French Terms

Lucien Lelong, Inc., Chicago, recently stipulated with the Federal Trade Commission to cease representing through the use of the words "Paris," "London," etc., that perfumes or other cosmetic preparations are made in France or any other foreign countries unless such is the case. The company further agreed to stop using foreign terms or words unless the English translation appears as conspicuously and in conjunction therewith and to cease using French or other foreign words as trade names unless it is stated that the products are made or compounded in the United States.

John Sunshine Recovers

John Sunshine, head of John Sunshine Chemical Co., Chicago, is reported to have recovered completely from the effects of a serious automobile accident. He convalesced at ranches in Arizona and New Mexico.

Wildroot Builds Addition

Wildroot Co., Buffalo, is building a two-building addition to its plant. The new units will cost approximately $50,000.

FLOATING SOAPS

THE current court fight between two of the country's largest soap companies over the right to make and sell white floating soaps of a particular general design has focussed interest on the historical background of modern-day white floating soaps. Some of the early history of floating soaps, including a number of novel and interesting types, will be reviewed in an article in an early issue of SOAP AND SANITARY CHEMICALS.

P. & G. Executive Dies

Thomas H. Thompson, 59, office manager of the Ivorydale plant of Procter & Gamble Co., died of a heart attack at his home on August 13. He started work with the company as a time-keeper in Ivorydale in 1903 and became office manager in 1918. He had been a member of the board of trustees of the P. & G. Pension and Benefit Plan since 1920, and in 1936 was made chairman of the Ivorydale Reviewing Board of the plan. Formerly vice-president of the Community Chest, he also was active in the City Charter Committee, a director of the Deaconess Hospital and of the Lenox Building & Loan Assoc., and treasurer of St. Stephen's Episcopal Church in Winton Place. His widow, Mrs. Belle Thompson, and a brother, Harvey Thompson, survive him.

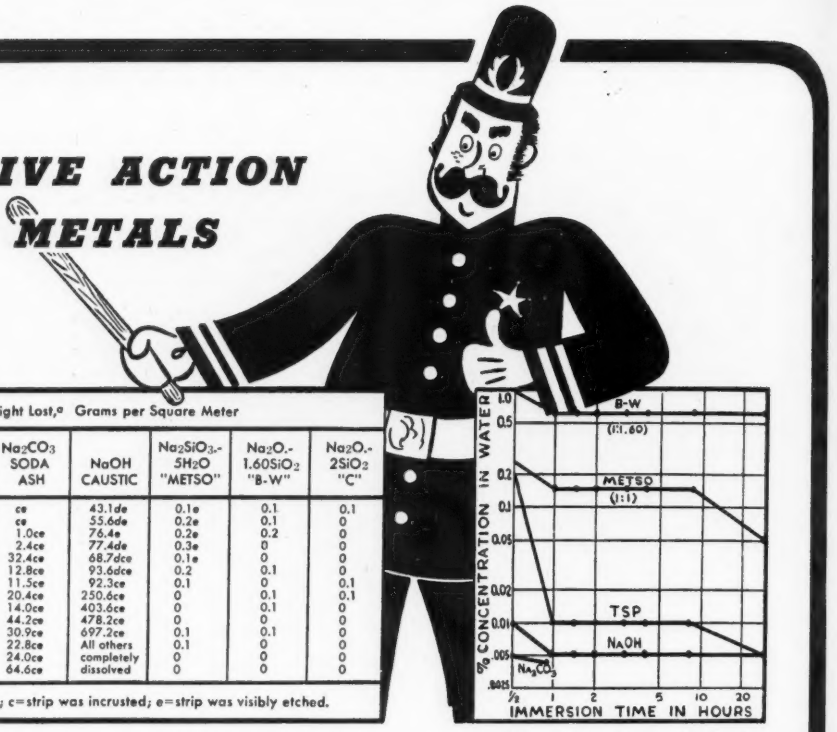
Westvaco Executive Changes

W. N. Williams, formerly manager of sales of Westvaco Chlorine Products Corp., New York, has recently been named as assistant to the president. J. R. Adams has been named to succeed Mr. Williams as manager of sales. Mr. Williams has been with Westvaco since 1924, holding several executive positions prior to his appointment as general manager of western operations in 1937. He was transferred to the New York office in 1938, then becoming manager of sales. Mr. Adams has been with Westvaco since 1931, several positions preceding his appointment as works manager at the Carteret, N. J. plant. He has been with the sales department at the New York office since 1937. The executive appointments were announced by Louis Neuberg, vice-president in charge of sales.

Senzodor In New Plant

Senzodor, Inc., Rochester, N. Y., manufacturers of perfumed incense, have just moved to new quarters at 2180 Monroe Ave. The business, which was started originally as a hobby of Mrs. Ann Foster, has expanded rapidly into a full-time commercial enterprise.

PROTECTIVE ACTION ON SOFT METALS



Concn. of Soln. %	Weight Lost,[a] Grams per Square Meter						
	SOAP	Na_3PO_4.-$12H_2O$ TSP	Na_2CO_3 SODA ASH	NaOH CAUSTIC	Na_2SiO_3.-$5H_2O$ "METSO"	Na_2O.-$1.60SiO_2$ "B-W"	Na_2O.-$2SiO_2$ "C"
0.20	0.7	6.0d	ce	43.1de	0.1e	0.1	0.1
0.25	0.6	7.6d	ce	55.6de	0.2e	0.1	0
0.30	1.2	9.2d	1.0ce	76.4e	0.2e	0.2	0
0.40	1.5d	12.4d	2.4ce	77.4de	0.3e	0	0
0.50	1.8d	15.0de	32.4ce	68.7dce	0.1e	0	0
0.60	1.9d	18.2de	12.8ce	93.6dce	0.2	0.1	0
0.80	2.0d	20.6de	11.5ce	92.3ce	0.1	0	0.1
1.00	2.9d	24.1de	20.4ce	250.6ce	0	0.1	0.1
1.50	3.8d	31.2de	14.0ce	403.6ce	0	0.1	0
2.00	9.2d	21.2de	44.2ce	478.2ce	0	0	0
2.50		32.4de	30.9ce	697.2ce	0.1	0.1	0
3.00	6.1d	50.4de	22.8ce	All others	0.1	0	0
3.50	7.3d	106.3e	24.0ce	completely	0	0	0
4.00	6.3d	120.1e	64.6ce	dissolved	0	0	0

[a]d=strip was darkened in color; c=strip was incrusted; e=strip was visibly etched.

● The superior behavior of the silicates is due to the characteristics of the silica. The combination of the proper silicate, the right quantity, and temperature furnishes effective cleaning with safety to the surface. The table above shows the weight lost by aluminum strips immersed in alkali solutions for 24 hours at 60° ± 2° C.

● The chart above shows the maximum concentrations of alkalies which did not visibly etch tin plate at 60° C. The larger safe concentration-time area with the silicates is noteworthy.

HOW SiO_2* AIDS CLEANING

Soluble silicates have long been known as detergents. With a better understanding of the role of silica (SiO_2) in washing processes, their high order of efficiency now serves soap manufacturers and fabricators of cleaning compounds more extensively. Illustrated above is an outstanding example of the special behavior of the silica content in PQ Silicates—its protective action on soft metals.

Send for a free copy of Bulletin #170, The Role of Silica—and Bulletin #333, Effect of Alkaline Detergents upon Metals. May we review with you how PQ Silicates can form the alkali-silica foundation for your detergent compositions? Why not write today?

*SiO_2 = silica content in PQ Soluble Silicate Cleaners.

PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

Propose Canadian Oil Use Cut

Canadian soap manufacturers may be obliged to cut their supplies of imported soap oils by 25 per cent on the basis of three years' average importations, if government restrictions on importation of vegetable oils go into effect. Dr. George Hilton, vegetable oil controller, it is understood, has worked out a plan which is at present being studied by soap manufacturers. This would require curtailment of both production and consumption. Principal motives for curtailment of imports are the conservation of United States exchange and the release of shipping space employed to bring vegetable oils from the Orient.

Chicago Golf Tournament

The fourth tournament of the Golf Auxiliary of the Chicago Drug and Chemical and Chicago Perfumery, Soap and Extract Associations was held August 12th at Medinah Country Club. Prizes were won by the following: Class A—1st, T. B. Singleton; 2nd, D. K. Olin; 3rd, Bruce Puffer; 4th, Thomas Sayers. Class B—1st, S. M. Lind; 2nd, Ray Morris; 3rd, H. J. Edmon; 4th, E. P. Gibney. Class C—1st, J. A. Gauer; 2nd, D. F. Lum; 3rd, Frank Topper; 4th, Dean Hildebrandt. Guest prizes were won by H. E. Rosensteel, R. R. Burtner, H. H. Hoppock and A. Sewell. The last Chicago tournament of the season is scheduled for Elmhurst Country Club on September 9th. The annual intercity meet with the Detroit association will be held September 19th in Detroit.

McGregor C-P-P Ad. Mgr.

George McGregor, formerly associated with Richard Compton, Young & Rubicam, and Ruthrauff & Ryan, advertising agencies, has just been appointed advertising manager for "Colgate" dental cream, "Cashmere Bouquet" soap and toilet preparations, and "Vel" by Colgate-Palmolive-Peet Co., Jersey City. Savington Crampton, formerly with William Esty and J. Walter Thompson, agencies, has been named C-P-P advertising manager in charge of "Super Suds," "Colgate" tooth powder, shave cream and brushless, "Crystal White" soap and "Halo" shampoo. Robert Healey, who was formerly in charge of all C-P-P soap products, now handles "Palmolive" soap, "Octagon" soap, "Palmolive" shave cream, "Klek", and "Teel" liquid dentifrice.

BIMS TO BATTLE, SEPT. 18!

BIMS final golf tournament of 1941 at Lakeville Golf Club, Great Neck, Long Island, on Thursday, Sept. 18! Martin Schultes, of Hewitt Soap, BIMS No. 1 Mogul, says it will be greatest BIMS party in history. He warns all BIMS members not to miss it!

Canadian C-P-P Grants Bonuses

A five percent cost of living allowance was recently granted to the employees of Colgate-Palmolive-Peet Co., Toronto. This was the second bonus allowed by the company "to assist employees in meeting rising living costs," according to Charles R. Vint, president. The first bonus went into effect in October, 1940.

Verley Pan-American Dept.

Otto Baptist, Pan-American export manager for Albert Verley, Inc., Chicago, perfuming materials, has just been transferred from Chicago to New York where he will collaborate with E. J. Strobl, executive vice-president and New York manager, in extending the activities of Verley's Pan American Export and Import Department. This department, whose headquarters will now be in New York, will handle shipments to Latin American countries and will also make all purchases of raw materials from these sources.

Hits Army Soap Making

Manufacture of soap from waste fats in Canadian army camps is false economy because of the loss of the glycerin content, reported Joseph H. Harris, Toronto member of the Canadian parliament, in a recent committee meeting on war expenditures. Mr. Harris, a soap manufacturer himself, said, "It is not sound business to make soap and let 10 per cent of the fat go to waste. Owners of glycerin plants would give back to the government a pound of soap for every pound of fat from army kitchens if they were given it and were permitted to recover the glycerin."

P & G Staffs Shell Plant

More than sixty employees of Procter & Gamble Co. have been assigned as the nucleus of the staff which will operate the Procter & Gamble Defense Corporation's shell-loading plant at Milan, Tenn. These men, taken from both Cincinnati and other P. & G. branches in various parts of the country, have been in training at ordnance plants. Top officers will remain at the Cincinnati headquarters of the defense subsidiary; others on the staff will be sent to Tennessee beginning this month. Full operations in the South are expected by the end of the year.

Officers who will remain in Cincinnati are: president Richard R. Deupree; vice-presidents Floyd M. Barnes and Harvey C. Knowles; secretary, H. Truxton Emerson; assistant secretaries, W. H. Watters and L. H. Wiggers; treasurer, William H. Tuttle; assistant treasurers, George S. Woodward and Roland G. Francis.

Morton P. Woodward, Cincinnati, will be production manager at Milan. Other men going to Milan from the Cincinnati general offices are: G. C. Ely, H. W. Hunt, S. D. Johnson, W. C. Meyer, L. E. Whitesides. The Ivorydale plant will send: A. L. Adams, W. P. Douglass, H. W. Espenscheid, H. E. Flanagan, R. W. Johnson, R. L. McCracken, Paul Ohmer, J. E. Pruden, J. P. Renshaw, G. W. Toben, and O. L. Tullis. The St. Bernard plant will send C. W. Castle and J. E. Rood. The quota from manufacturing headquarters is: L. D. Bauer, M. T. Brant, W. W. Bray, S. M. Dahl, J. H. Fletcher, T. E. Hall, R. H. Kellogg, D. A. Levrick, C. N. Schmitt, W. C. Shaw, H. B. Stevenson.

"INDEX"

TO BETTER QUALITY SOAPS AND CLEANSERS

FOR	USE
Bath Crystal Preparations Bubble Bath Preparations Household Cleanser Preparations Soap Powders Commercial Cleansers	SOLVAY SNOWFLAKE CRYSTALS
Special Mixtures for Heavy Duty Cleaning	SOLVAY SUPER ALKALIES
Soaps Shaving Creams and Soaps Tooth Pastes Shampoos Liquid and Soft Soaps Automobile Soaps, etc.	SOLVAY CAUSTIC POTASH
Soap Heavy Duty Cleansers Commercial Metal Cleaners Drain Pipe Solvents	SOLVAY CAUSTIC SODA
Soap Powders Special Cleansing Mixtures	SOLVAY FLUF*
Soap Commercial Cleanser Mixtures Strong Soap Powders	SOLVAY 58% SODA ASH
Moth Control Deodorizing Preparations	SOLVAY PARA-DICHLOROBENZENE

FOR TECHNICAL SERVICE

In the Solvay Laboratories, men with years of experience handle your alkali problems and make recommendations on the basis of laboratory findings. Solvay will be glad to send these specialists to your soap plant to study actual operating conditions and help adapt laboratory findings to specific plant conditions. Write today.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

Plants Located At:

Syracuse, N. Y. • Detroit, Mich. • Baton Rouge, La. • Hopewell, Va.

* Reg. U. S. Pat. Off.

Introduce "Bluebrook" Soaps

Jewel Food Stores, operating a chain of 136 units in the Chicago area, have introduced two new laundry soap products packaged under their own private name. "Bluebrook" granulated soap is being offered at two 24-oz. packages for 25 cents and "Bluebrook" soap flakes in two 12½-oz. packages for 21 cents. Another product, "Bluebrook" cleaner, a kitchen scouring powder, was to be formally announced shortly, it was stated by the company's soap buyer.

Quaker Chem. Expand Plant

Quaker Chemical Products Corp., Conshohocken, Pa. is expanding its storage and manufacturing facilities, increasing its floor space approximately 12,000 square feet. These additions will require an expenditure of about $50,000. Most of the new construction will be of stone, concrete and brick. The new facilities, which are scheduled for completion by November 1st, will enable Quaker to greatly increase production. In addition to the new buildings, new stainless steel stills, condensers and other equipment are being installed for the manufacture of resins and esters to take care of enlarged business along these lines.

Magnus Honors McK & R. Head

A dinner in honor of William J. Murray, Jr., recently elected president of McKesson & Robbins, New York, is being tendered by Percy C. Magnus, head of Magnus, Mabee & Reynard, Inc. at the Waldorf Astoria on September 4th. Well known figures in the drug and cosmetic industries will be present to fete Mr. Murray. Mr. Magnus, who will act as host, is a friend of Mr. Murray's of many years standing.

Crown Can Advances Swartz

Richard P. Swartz, vice-president of Crown Can Co., Philadelphia, has just been named to the post of assistant to the president. Mr. Swartz started with Crown Cork & Seal Co. twenty years ago and over that period rose from assistant foreman to manager of the company's machine shops in Baltimore. After the organization of Crown Can Co. he was transferred to the Philadelphia plant, later becoming vice-president in charge of production at all can manufacturing plants of the company.

ISCO Open Cincinnati Branch

Early in September, Innis, Speiden & Co. of New York, will open in the Carew Tower, Cincinnati, a new branch office in charge of Walter D. Kane, formerly of the firm's Cleveland office. In Cleveland, Mr. Kane will be replaced by Walter E. Baumeister, transferred from the Isco Chemical Division at Niagara Falls, N. Y. The new Cincinnati office will serve the trade in southern Ohio, Indiana and Kentucky and will be a sub branch of the Cleveland office, under the direction of Donald S. Cushman, Cleveland district manager. A further change in the Innis, Speiden personnel will be the moving of Wm. H. Elliott, Jr. from the Isco Chemical Division at Niagara Falls, to the company's Boston office. Mr. Elliott will join the New England sales force, working under the direction of William D. Luhrs, Boston district manager.

P. & S. Head Donates Yacht

Walter M. Schwartz, president of Proctor & Schwartz, Inc., Philadelphia, industrial drying and textile machinery, recently offered his yacht to the United States Coast Guard and it has been accepted by Commander I. E. Eskridge of Coast Guard Headquarters. It will probably be used for patrol duty on Delaware Bay. The "Olif." is 68 feet long and 45 tons.

P & G Reports Record Quarter

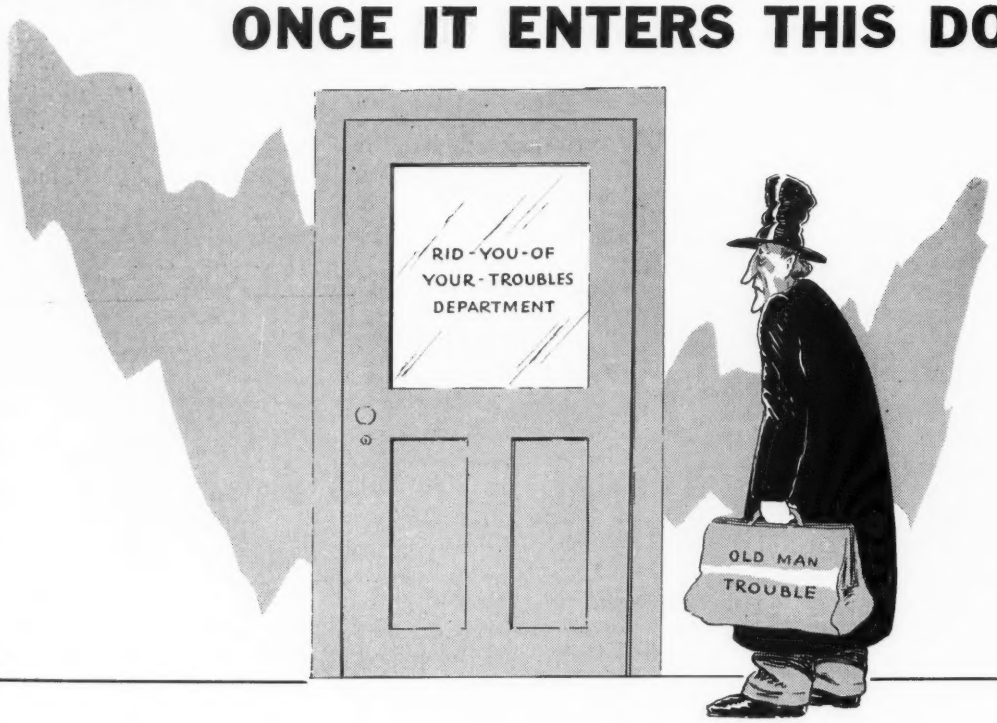
Largest profits for any three-month period in its history was shown by Procter & Gamble Co. for the quarter ended June 30, the figure being $10,805,454, equal to $1.66 a share on common stock after preferred dividends. The previous record was the quarter ended March 31, 1937, the figures then being $8,198,490, or $1.26 a common share. The figures for quarter ended June 30, 1940 were $6,355,345, or 96.8 cents a common share.

Annual report for year ended June 30 showed net profits of $27,581,523 or $4.21 a common share. Figures for the previous year were $28,628,493 or $4.37 a common share. Gross sales the last fiscal year were $228,619,735, as against $229,975,444 in the record year of 1936-37 and were over 7 per cent greater than in 1939-40 when $213,729,798 was reported.

President Richard R. Deupree said sales of both soap and shortening have been increased sharply as a consequence of increased employment and larger earnings in the country's industries. Shortage in shipping was mentioned as having an increasing effect on the company's supply of raw materials. He regarded the crop outlook as favorable. Said the annual report: "There are indications of a large cottonseed and soy bean production, as well as increased production of lard. The reason we emphasize supplies is that our experience in England and Canada has shown that it is in this direction, in times such as these, that we may expect difficulties. This country produces a sufficient quantity of edible fats but insofar as its soap fats are concerned it produces only approximately three-fourths of its needs. One-fourth of our soap fats must be imported. This is largely made up of cocoanut oil, which not only is not produced in this country, but for which there is no known substitute, particularly as it is used in our business."

Mr. Deupree said that although no English earnings had been transferred to the American company, none of the three English plants had sustained serious war damage; that production has not been lessened on account of war damages, although it has been reduced about 20 per cent by shortages of raw materials there. Cuban and Philippine Island business was reported as normal. Net profit of subsidiaries in Cuba and the Philippines amounted to $864,787. Canadian operations reported as excellent, with transfer of $673,423 of current earnings to United States included in net earnings.

IT'S GOOD-BYE TO TROUBLE ONCE IT ENTERS THIS DOOR!



WHEN you're worried about raw material shortages, priorities and the like, (and who isn't?) what do you do about it? Do you hide your head in a dark corner and cry your eyes out, or do you just sit at your desk, chew your fingernails and mope? Not if you've got a single drop of rich, red blood in your veins will you do any one of these. Instead, you'll reach for your 'phone, call WAtkins 9-4100 (that's us!) and ask for our "Rid-You-of-Your-Troubles" Department. Then you'll unburden yourself and even if we can't help, you'll feel better for having told your troubles to a sympathetic soul. But the chances are we **CAN** help, especially if your problem concerns soap perfuming, formula adjustment or the duplication of unavailable aromatics and essential oils. So why not 'phone, tell us your needs and let us go to work? . . . You've everything to gain . . . and nothing to lose.

We have one entire laboratory devoted solely to problems of soap perfuming.
It is at **your** service.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

A FRITZSCHE PRODUCT for EVERY PURPOSE...

ESSENTIAL OILS . . . The FRITZSCHE label on your Essential Oil container is an absolute guarantee of purity and complete conformity to the highest standards. These basic materials are the finest that modern methods and experience can produce.

AROMATIC CHEMICALS . . . For finer aromatic effects and greater economy, choose your chemical requirements from this large and superlative selection of materials.

FIXATIVES . . . Timely now are our four Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris, all especially adaptable to soap making. Our complete line includes, also, Rose Crystals —one of the best fixatives for all-around use.

ANTI-OXIDANTS . . . Developed for the preservation of soaps, animal and vegetable fats and oils, these materials are highly important to the soap manufacturer. Write us for details concerning Oxidex.

BATH SALT PERFUMES . . . These materials, combining both perfume and color, greatly facilitate the process of manufacture. Write for circular describing our Bath Perstels and giving complete list of perfume-color blends.

INSECTICIDES AND DISINFECTANTS . . . Some of our most important research achievements have been in this field of investigation. All materials listed in our catalog and recommended for these purposes have behind them guarantees of experience and the indisputable tests of time.

DEODORIZING COMPOUNDS . . . Write us for circulars describing Neutroleum, Javollal, Methalate "C", Safrella and other important deodorizing compounds of proven effectiveness.

TOILET SOAP COMPOUNDS . . . Many new and important toilet soap perfumes have been added to our already extensive line. These provide exquisite odor quality at very low cost. Ask us for particulars.

LIQUID SOAP AND SHAMPOO PERFUMES . . . Being highly soluble and mixing readily with liquid soaps, these special perfume blends are easy to use and low in cost.

DENTAL AND ORAL FLAVORS . . . These flavoring specialties are skillfully blended to produce pleasant, clean, refreshing taste effects. We are prepared, also, to create flavor blends to meet your own specifications and costs. Please feel free to consult us.

SEND FOR **SAMPLES**

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

May Raise Toiletries Wages

The minimum wage for the toilet preparations industry under the Walsh-Healy act, originally set at 37½ cents per hour, may shortly be raised to 40 cents per hour to bring the scale into conformity with the 40-cent wage rate adopted by the Administrator of the Wage and Hour Division for the drug, medicine and toilet preparations industry. Time for the filing of opposition statements expired August 20. The administrator is expected to issue a statement on the proposed wage scale advance shortly.

Expand "Fairy" Advertising

The new advertising campaign for Lever's "Fairy" soap, first in ten years for that product, is being expanded and was expected to reach fifty cities by September 1. It broke in New York in mid-August, with Baltimore, Boston and Philadelphia next on the list. The campaign features an offer of a cake for one cent, with the purchase of three.

P & G Feature Jingle Contest

Procter & Gamble Co. are offering cash prizes totalling $46,000 in a current "jingle contest" of six weeks duration promoted on behalf of "Camay" toilet soap and "Oxydol." Contestants write the last line of a jingle for which a grand prize of $1,000 and twenty-five other prizes of $100 each are paid each week. At the close of the contest the six winners of the $1,000 weekly prizes are eligle for an extra prize worth $25,000.

Drackett To Build

Drackett Co., Cincinnati, has announced plans for the construction of two new plants to cost approximately $1,000,000 for the manufacture of soybean products if the Federal government grants its request for priorities for the materials needed for the structures. The new plants will be erected on property adjoining the new soybean plant put into operation at Sharonville, near Cincinnati, earlier in the year.

U.S.I. ALCOHOL NEWS

September ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1941

HAND LOTION SALES ON UP TREND

As more women enter new fields of employment, feminine hands need more care to keep them attractive, and signs point to an increasing demand for hand lotions containing alcohol.

Growing Number of Women Workers Expected to Boost Market Demand

A new spur to sales of hand lotions, protective creams, and similar products is seen in the increasing employment of women, particularly in mechanical tasks that make greater care of the hands imperative. Hand lotion makers using alcohol in their formulations have an excellent opportunity to secure a good share of this new potential market, because of the many desirable features that alcohol contributes to lotions.

Advantages of Alcohol

Comparatively high evaporation rate of alcohol results in a cooling, soothing effect when lotions containing it are applied to the skin. Because of its high solvent powers, it aids in the cleansing action of the lotion. Its antiseptic powers are an added advantage in formulating products that win popular approval. (U.S.I. produces Specially Denatured Alcohol in sixteen formulas authorized for use in face and hand lotions.)

PURIFIES VITAMIN A ESTERS WITH AID OF ETHYL ALCOHOL

A novel technique for purifying Vitamin A esters, described in a recent patent, utilizes ethyl alcohol as the solvent in an extraction process. The alcohol dissolves most of the impurities present, leaving a product of high purity.

The method is applicable both to Vitamin A esters obtained from fish oils by molecular distillation, and to those prepared by synthetic means. When Vitamin A esters are prepared by esterification of Vitamin A alcohol, the ethyl alcohol extraction process offers an effective way of separating the unreacted Vitamin A alcohol from the esters. No method was previously known for bringing about this separation, but an alcohol-water solution containing about 83-85% alcohol has been found to be a good solvent for the Vitamin A alcohol, while it does not dissolve the esters.

In purifying esters derived by molecular distillation of fish oils, the percentage of alcohol is not critical, and higher concentrations can be used, such as 95 or 96%. When the concentrate contains a considerable amount of impurities, repeated extraction with fresh alcohol is suggested.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

A new aromatic chemical is described as being of lactone structure with a caramel odor and a strong suggestion of strawberry. Maker recommends it for producing artificial flavors or for reinforcing natural flavors, as well as for imparting a new note in perfumes. **(No. 490a)**

Synthetic oil of coriander V can be used to replace the natural product in all toilet preparations without discoloration, according to the manufacturer. Product is not intended for use in pharmaceutical preparations. **(No. 491a)**

An ampoule washing machine is reported to handle ampoules ranging in size from 1 to 10 cc. at the rate of 60 ampoules a minute. Machine provides total washing time of 44 seconds for each ampoule. **(No. 492a)**

Surface-active agents for the soap and cosmetic industries are described in a new bulletin giving suggested formulations in shaving creams, shampoos, liquid soap, medicated and toilet soaps, bubble baths, and dentifrices. **(No. 493a)**

A low-cost homogenizer with a capacity of 15 gallons per hour is said to be suitable for use by flavoring, drug, and cosmetic manufacturers. Unit provides working pressures from 800 to 2,500 pounds. **(No. 494a)**

BUBBLE BATH PREPARATIONS CAPTURE CUSTOMERS' FANCY

Still a relative newcomer among cosmetic products, the bubble bath preparations are continuing to forge ahead in their strong bid for popular approval. Consisting chiefly of a foaming agent and a water softener, these preparations offer interesting possibilities to cosmetic manufacturers who want to build sales by diversifying their line.

In formulating colored bubble bath preparations (which should help to give sales a lift when packaged in transparent containers), alcohol can be used to advantage in dispersing the color, resulting in greater color uniformity in the finished product. In addition, alcohol is often used to give better dispersion of the essential oils employed for perfuming, and thus to decrease the tackiness of the finished preparation.

U.S.I. INDUSTRIAL CHEMICALS, INC.
60 EAST 42ND ST., NEW YORK (USI) BRANCHES IN ALL PRINCIPAL CITIES
INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

CONTRACTS AWARDED

Army Soap Awards

The following awards were made by the Army Quartermaster Corps, Atlanta, in a recent opening: Day & Frick, Phila., 40,000 cakes grit soap, 2.7c; Colgate-Palmolive-Peet Co., Bklyn., 200,000 cakes laundry soap, 4.66c; R. M. Hollingshead Corp., Camden, N. J., 500 lbs. saddle soap, 12c and Armour & Co., Chicago, 4,000 cakes toilet soap, 1.283c.

Insecticide Bid

Brilco Labs., New York, submitted the low bid on 6,400 gals. liquid insecticide at 58c per gal. in a recent opening by the Army Quartermaster Corps, Jersey City.

Soap Awards

The following companies recently received contracts by the Army Quartermaster Corps, Chicago: Smilo Soap Co., Detroit, 6,600 lbs. powdered laundry soap, 9c per lb.; Swift & Co., Chicago, 40,000 lbs. chip soap, 8.46c per lb. and Solvay Sales Corp., Chicago, 11,200 lbs. laundry soap at 1.8c per lb.

Army Q. M. Awards

In recent openings by the Army Quartermaster Corps, Jersey City, the following contracts were awarded: Janitor Supply House, Baltimore, 12,000 lbs. trisodium phosphate, 2.76c; Pennsylvania Salt Mfg. Co., Phila., 3,000 cans calcium hypochlorite, $1.05 and 600 cans at 97.5c; Colgate - Palmolive - Peet Co., Jersey City, 200,000 lbs. laundry soap, 8.46c bbl.; W. H. & F. Jordan Jr. Mfg. Co., Phila., 400 gals. insecticide, 69.4c. In another opening, Trade Laboratories, New York, received a contract for 183,400 tubes shaving cream at 3.3c and Colgate-Palmolive-Peet Co., Jersey City, a contract for 183,400 cakes toilet soap at 1.64c. The Quartermaster Corps at Ft. Sam Houston, Texas, awarded Colgate-Palmolive-Peet Co., Kansas City, Kansas, a contract for 6,000 lbs. soap chips at 9.92c and 1,542,000 lbs. laundry soap at 5.14c; Day & Frick, Phila., 60,000 grit soap, 2.9c and 34,000 cakes at 2.3c; Manhattan Soap Co., Bristol, Pa., 16,000 cakes toilet soap at 4.5c and Peaslee-Gaulbert Corp., San Antonio, 62,250 lbs. trisodium phosphate at 4c per lb. In another opening at Ft. Sam Houston, Day & Frick, Phila., received a contract for 6,000 cakes grit soap at 3.2c and another lot of 6,000 cakes at 2.6c. Selmar Soap Co., Memphis, received an award for 140,000 lbs. laundry soap at 4.99c per lb.

Treasury Soap Bid

Conray Products Co., New York, was the only bidder on 600 lbs. hard, white soap at 36.8c per lb. in a recent opening by the Treasury Procurement Div., Washington, D. C.

TSP Bids

In a recent opening by the Treasury Dept., Chemical Mfg. & Dist. Co., Easton, Penna., submitted the low bid on 3,000 containers of trisodium phosphate at 3.94c.

Laundry Soap Awards

Armour & Co. of Del., Union Stock Yards, Ill., was awarded a contract for 150,060 cakes of laundry soap at 4.82c per cake in a recent opening by the Army Quartermaster Corps, Chicago. In the same opening, Iowa Soap Co., Burlington, Iowa, was awarded a contract for 49,980 cakes at 4.8c.

Navy Dept. Bids

In recent openings by the Navy Dept., Washington, D. C., the following companies were low bidders: Swift & Co., Chicago, 150,000 lbs. soap powder at 3.271c per lb.; Procter & Gamble Dist. Co., Cincinnati, 175,000 lbs. salt water soap at 6.04c; Colgate - Palmolive - Peet Co., Jersey City, 175,00 lbs. salt water soap at 4.73c per lb.; R. M. Hollingshead Corp., Camden, N. J., 10,000 pints metal polish at 8.39c per pint; Hercules Powder Co., Stoneham, Mass., 20,000 lbs. trisodium phosphate at 3.86c per lb.; Swift & Co., Chicago, 4,000 lbs. chip soap at 8.89c per lb.; Armour & Co., Chicago, 5,000 lbs. laundry soap at 5.5c per lb.

Rust Preventive Award

Standard Oil Co. of Indiana was awarded a contract by the Army Quartermaster, Rock Island Arsenal, Ill., for 200,000 lbs. rust preventive compound, light, in 25-lb. non-returnable drums, at 6.95c per lb.

Soap Powder Bids

J. Eavenson & Son, Camden, N. J., was the low bidder on 6,720 lbs. soap powder at 2.69c per lb. in a recent opening by the Treasury Dept., Washington, D. C.

Bronze Polish Bid

Monogram Co. of America, New York, was the low bidder on 500 gals. of bronze polish at 65c per gal. in a recent opening by the Post Office Dept., Washington, D. C.

Rust Preventive Bids

In a recent opening by the Army Quartermaster, Rock Island Arsenal, Ill., E. F. Houghton Co., bid low on 40,000 lbs. rust preventive compound, heavy, in returnable steel drums at 6.64c per lb. Penola, Inc. was low on a similar number of lbs. in non-returnable drums at 3.95c per lb.

Chip Soap Bids

In a recent opening by the Treasury Dept., Washington, D. C., Chas. W. Young Co., Phila., bid low on 160,000 lbs. chip soap at 8c per lb.

Coal Tar Creosote Award

Reilly Tar & Chemical Corp., Indianapolis, was awarded the contract on 7,000 gals. coal tar creosote, f.o.b. Ft. Benning, Ga., at 14.155c in a recent opening by the Army Quartermaster Corps.

FIRST THINGS FIRST!

Despite full-time operation and new highs in Westvaco plant efficiency, at times we find it difficult to keep up with the mounting demand for certain items in our line.

So "for the duration," we're doing first things *first*—taking care of national defense needs, then meeting the needs of our customers as fairly as possible.

While we may not always be able to accept an order in the quantity required or live up to our reputation for extra-prompt shipment, we are at this time particularly anxious to render technical service that may help you to use Warner Chemicals with the greatest possible efficiency.

WARNER CHEMICAL COMPANY

Division of

WESTVACO CHLORINE PRODUCTS CORPORATION

Chrysler Building, New York City

NEW TRADE MARKS

The following trade-marks were published in the August issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

S. M.—This in solid letters describing saddle soap. Filed by Stalker Mfg. Co., New York, Mar. 17, 1941. Claims use since Apr. 12, 1939.

STEAMFAS—This in solid letters describing cleaning compound. Filed by Turco Prods., Los Angeles, Apr. 16, 1941. Claims use since Jan. 10, 1940.

BATH O' BUBBLES—This in script letters under words "Glamour Girl" describing saponaceous bubble bath. Filed by Ultra Chemical Works, Paterson, N. J., Apr. 17, 1941. Claims use since Mar. 29, 1941.

BLOT-X—This in script letters over rectangular border describing detergent. Filed by Blotex Co., Springfield, Ohio, Apr. 22, 1941. Claims use since Mar. 11, 1941.

THE SOAPLESS SUDSER—This in solid letters describing washing powder. Filed by Climalene Co., Canton, Ohio, Apr. 24, 1940. Claims use since Feb. 15, 1940.

FLORES DE ESPANA—This in fancy letters describing soap. Filed by Hewitt Soap Co., Dayton, Ohio, Apr. 29, 1941. Claims use since June, 1934.

BOTANY—This in solid letters describing soap. Filed by Botany Worsted Mills, Passaic, N. J., May 21, 1941. Claims use since Sept. 6, 1939.

SULFLUID—This in script letters describing shampoo. Filed by Bower Sulphur Labs., New York, Feb. 8, 1941. Claims use since Jan. 27, 1941.

DI-NITROL—This in solid letters describing insecticides. Filed by Sherwin - Williams Co., Cleveland, May 8, 1941. Claims use since Feb. 10, 1941.

ZINGO—This in solid letters describing insect repellent. Filed by American Drug & Chemical Co., Minneapolis, May 19, 1941. Claims use since Aug. 8, 1940.

GERO — This in solid letters over drawing of moth describing insecticide. Filed by Gero Products, South Boston, Mass., May 21, 1941. Claims use since May 20, 1929.

WHITE SAIL — This in solid letters describing floor wax. Filed by Atlantic & Pacific Tea Co., New York, Apr. 22, 1941. Claims use since Mar. 7, 1941.

GLO-ZIP — This in solid letters describing floor wax. Filed by Fuld Bros., Apr. 29, 1941. Claims use since Mar., 1941.

EVER YOURS — This in script letters describing saponaceous foot bath. Filed by Eaton Labs., Chicago, May 26, 1941. Claims use since Oct. 1, 1940.

LADY CHARM—This in script letters describing saponaceous foot bath. Filed by Eaton Labs., Chicago, May 26, 1941. Claims use since Mar. 1, 1941.

WAXHIDE—This in solid letters describing soaps. Filed by Bell Co., May 28, 1941. Claims use since Jan. 15, 1939.

MYSTIC ZIP—This in solid letters describing cleaner. Filed by Mystic Foam Corp., Cleveland, June 6, 1941. Claims use since Aug. 31, 1938.

PENPOINT N V S—This in script and solid letters over drawing of penpoint describing shampoo. Filed by Henrietta E. Boyce, Glen Rock, N. J., Oct. 9, 1940. Claims use since Sept. 20, 1940.

SOL-WET—This in solid letters describing detergent. Filed by California Spray - Chemical Corp., Wilmington, Del., Nov. 19, 1940. Claims use since Aug. 24, 1940.

COFFETTE — This in outline script letters describing soap. Filed by Coffette Co., Long Island City, N. Y., Mar. 6, 1941. Claims use since Dec. 1, 1940.

STUB — This in semi-script letters over words "2-way beard softener" describing shaving cream. Filed by Stub Co., Bklyn., Apr. 24, 1941. Claims use since May, 1940.

ULTRA-WASH — This in solid letters describing auto cleaner. Filed by Atlantic Refining Co., Phila., May 27, 1941. Claims use since Mar. 10, 1941.

MOUNTIE—This in solid letters describing soap. Filed by Elizabeth Arden Sales Corp., New York, June 24, 1941. Claims use since Mar. 1, 1940.

20TH CENTURY—This in outline letters over rectangle describing motor cleaner. Filed by 20th Century Chemical Co., Camden, N. J., June 7, 1940. Claims use since Feb. 1, 1937.

B-GON—This in solid letters describing insecticide. Filed by California Spray-Chemical Corp., Wilmington, Del., Apr. 9, 1941. Claims use since Mar. 27, 1941.

A-200—This in outline letters inside circle and over word "Ectoparasiticide" describing insecticide. Filed by Walter K. Angevine, Washington, D. C., May 23, 1941. Claims use since Apr. 25, 1941.

DHOBI—This in fancy script letters describing washing preparation. Filed by National Cleaning Products Co., Columbus, O., June 5, 1941. Claims use since Feb. 21, 1941.

PERFECT CIRCLE CLEANER—This in solid letters inside circle describing cleaner. Filed by W. H. Taylor, Birmingham, Ala., June 11, 1941. Claims use since May 1, 1941.

RITE-TONERDE—This in solid letters describing metal polish. Filed by Conrad Wolff, Irvington, N. J., June 26, 1941. Claims use since June 17, 1941.

SOAPETTES—This in solid let-

. . . *a leading authority*

on the manufacture of Fine Chemicals, Drugs, Antiseptics; Patent Medicines, Pills, Tablets, Invalid Foods, tonics; ointments, lotions, dentifrices; Detergents, disinfectants, fumigants, insecticides, fertilisers, animal medicines; Fine Soaps, Toilet Goods, Shaving Soaps, medicated soaps, laundry and industrial soaps, Polishes, Photographic Chemicals, Essential Oils, Perfumes, Cosmetics, Hair Preparations, Pharmaceutical Accessories, Bath Salts, Powders, eye and manicure preparations.

The MANUFACTURING CHEMIST

Pharmaceutical Ointments and Emulsions (Series)
R. G. Harry, F.I.C., F.R.M.S.
Liquid Cosmetics (A Series)
J. M. VALLANCE
Drug Resources of the British Empire
W. E. JAMES, F.I.S., M.P.S.
Iron and Copper in Animal Health and Cobalt Manganese and Magnesium in Animal Health
F. EWART CORRIE, B.Sc., N.D.A.
Preservation of Cosmetic and Therapeutic Creams and Lotions
R. G. HARRY, F.I.C., F.R.M.S.
Practical Aspects of Manufacture of Toilet Preparations for Export
H. STANLEY REDGROVE, B.Sc., F.I.C.
Measures for Cutting Costs in Wax Polish Manufacture
L. IVANOVSZKY
Efficient Research—Genatosan's New Laboratories
Drug and Essential Oil Plants in Great Britain
H. STANLEY REDGROVE, B.Sc., F.I.C.

Subscription
10/-
per annum
12/6 Abroad

Published monthly by
LEONARD HILL LIMITED
17, Stratford Place, London, W. 1, ENGLAND

Also publishers of
Food Manufacture
Paint Manufacture
Petroleum
Food Manufacture Weekly
Indian & Eastern Chemist
Food Industries Manual
Rubber Industry
Chemical Industries
and Technical Books

ters describing soap impregnated pads. Filed by Club Aluminum Products Co., Chicago, June 27, 1941. Claims use since May 29, 1941.

WALNUT GROVE—This in solid letters describing insecticides. Filed by Walnut Grove Products Co., Atlantic, Iowa, Nov. 25, 1940. Claims use since May 28, 1920.

NATRA-LYN — This in semi-script letters describing shampoo. Filed by Natra-Lyn Mfg. Co., Phila., May 24, 1941. Claims use since May 12, 1941.

ORALINE—This in solid letters describing mouth wash. Filed by S. S. White Dental Mfg. Co., Phila., June 6, 1941. Claims use since Nov. 4, 1940.

WF — This in outline letters describing moth-proof. Filed by Zonite Prods., New York, June 25, 1941. Claims use since Apr. 9, 1941.

WF LARVEX—This in outline and script letters describing moth-proof. Filed by Zonite Prods., New York, June 25, 1941. Claims use since Apr. 9, 1941.

Trade Marks Granted

388,961. Insecticides. Rose Mfg. Co., Phila. Filed Sept. 23, 1939. Serial No. 423,897. Published Feb. 6, 1940. Class 6.

388,964. Cleanser. Federated Foods, Inc., Chicago. Filed Nov. 9, 1939. Serial No. 425,465. Published Nov. 5, 1940. Class 4.

388,967. Shampoo. Reese and Linehan, Portland, Ore. Filed Feb. 5, 1940. Serial No. 428,239. Published Apr. 8, 1941. Class 6.

388,980. Disinfectant. Rochester Germicide Co., Rochester. Filed Aug. 15, 1940. Serial No. 435,030. Published Oct. 22, 1940. Class 6.

388,984. Rodent killer. P. C. Product Co., St. Louis. Filed Sept. 30, 1940. Serial No. 436,522. Published May 13, 1941. Class 6.

389,036. Engine detergent. Curran Corp., Malden, Mass. Filed Feb. 26, 1941. Serial No. 441,015. Published May 6, 1941. Class 6.

389,050. Brushless shaving cream. King Cotton Labs., Memphis, Tenn. Filed Mar. 3, 1941. Serial No. 441,157. Published May 13, 1941. Class 4.

389,060. Leather detergent. Sandoz Chemical Works, New York. Filed Mar. 6, 1941. Serial No. 441,291. Published May 13, 1941. Class 4.

389,069. Athlete's foot preparation. Passaic Analytical Labs., Inc., Passaic, N. J. Filed Mar. 11, 1941. Serial No. 441,443. Published Apr. 29, 1941. Class 6.

389,090. Denture powder. Clark-Cleveland, Inc., Binghamton, N. Y., Filed Mar. 19, 1941. Serial No. 441,696. Published May 13, 1941. Class 6.

389,342. Cleanser. Vestal Chemical Co., St. Louis. Filed May 24, 1939. Serial No. 419,780. Published Oct. 24, 1939. Class 6.

389,357. Exterminators. Cowley Mfg. Co., Hugo, Okla. Filed May 29, 1940. Serial No. 432,463. Published May 20, 1941. Class 6.

389,373. Fly sprays. California Texas Oil Co., New York. Filed Nov. 19, 1940. Serial No. 438,034. Published May 27, 1941. Class 6.

389,412. Floor wax and auto polish. Western Paint & Varnish Co., Duluth, Minn. Filed Feb. 21, 1941. Serial No. 440,896. Published May 20, 1941. Class 16.

389,413. Auto polish. S. C. Johnson & Son, Racine, Wisc. Filed Feb. 24, 1941. Serial No. 440,940. Published May 20, 1941. Class 16.

389,417. Cleaner. Schepp Labs., East Paterson, N. J. Filed Feb. 26, 1941. Serial No. 440,998. Published May 20, 1941. Class 4.

389,427. Parasiticides. Atlas Powder Co., Wilmington, Del. Filed Mar. 4, 1941. Serial No. 441,190. Published May 20, 1941. Class 6.

389,447. Soap. Dr. W. J. Ross Co., Los Alamitos, Calif. Filed Mar. 10, 1941. Serial No. 441,414. Published May 20, 1941. Class 4.

389,483. Insecticides. Derris, Inc., New York. Filed Mar. 22, 1941. Serial No. 441,812. Published May 27, 1941. Class 6.

389,484. Floor wax and polish. Derris, Inc., New York. Filed Mar. 22, 1941. Serial No. 441,813. Published May 20, 1941. Class 16.

389,491. Soap. Claire Mfg. Co., Chicago. Filed Mar. 24, 1941. Serial No. 441,859. Published May 20, 1941. Class 4.

389,593. Eyeglass cleaner. Julius D. Edinger, N. Y. Filed Apr. 10, 1941. Serial No. 442,446. Published June 3, 1941. Class 4.

389,594. Soap. Peter J. Nepper, Rapid City, S. Dak. Filed Apr. 11, 1941. Serial No. 442,495. Published June 3, 1941. Class 4.

389,623. Polish. Walter De-Mar Co., Des Moines, Iowa. Filed Mar. 5, 1941. Serial No. 441,258. Published June 3, 1941. Class 16.

389,633. Detergent. Fuld Bros., Baltimore. Filed Mar. 22, 1941. Serial No. 441,817. Published June 3, 1941. Class 4.

389,638. Cleaner. Bay West Paper Co., Green Bay, Wisc. Filed Mar. 27, 1941. Serial No. 441,996. Published June 3, 1941. Class 4.

389,670. Insecticide. Doggett-Pfeil Co., Springfield, N. J. Filed Dec. 3, 1938. Serial No. 413,437. Published Apr. 30, 1940. Class 6.

389,689. Insecticide. Associated Prods. Co., Columbus, O. Filed Nov. 2, 1940. Serial No. 437,502. Published May 27, 1941. Class 6.

389,697. Poultry insecticide. Atkins Poultry Prods., Pomeroy, O. Filed Jan. 13, 1941. Serial No. 439,614. Published Feb. 25, 1941. Class 6.

389,714. Chemical polishing cloth. Haag Laboratories, Chicago. Filed Mar. 3, 1941. Serial No. 441,162. Published June 10, 1941. Class 4.

389,716. Athlete's foot preparation. Ped-O-Sav Co., Montclair, N. J. Filed Mar. 8, 1941. Serial No. 441,375. Published June 10, 1941. Class 6.

389,740. Shaving cream. F. E. Everson, New York. Filed Mar. 24, 1941. Serial No. 441,862. Published June 10, 1941. Class 4.

389,742. Metal polish. Golden Wax Cleanser Co., Clarksville, Tenn. Filed Mar. 25, 1941. Serial No. 441,906. Published June 10, 1941. Class 4.

389,743. Cleaner. Golden Wax Cleanser Co., Clarksville, Tenn. Filed Mar. 25, 1941. Serial No. 441,907. Published June 10, 1941. Class 4.

WASH GREASE AWAY WITH A *Hose!*

Make degreasing easy for your customers. Get them to use this unusual Concentrated Degreasing Fluid. Just mix it with plain, ordinary kerosene first . . . then pour or spray the solution on the grease covered surface . . . allow it to soak in . . . then wash it *all* away with a hose!

It reduces grease and dirt to a state quickly soluble in water. It leaves a bright, clean surface. No greasy film remains.

Easy to use—and economical. Your customers don't pay high prices for *diluted* degreasing agents . . . they mix the solution themselves!

Send coupon for further information on this and other quality maintenance products. Build *your* business with reputable merchandise backed by the integrity and experience of one of the oldest and largest manufacturers of high grade industrial chemicals.

Cleans

GREASY FLOORS
DRIVEWAYS
WASH RACKS
ELEVATORS
TOOLS
MACHINERY
TRACTORS
CAR, BUS AND TRUCK BODIES AND CHASSIS,
and many others.

R. M. HOLLINGSHEAD CORPORATION
Industrial Division
Camden, N. J. • Harborside, Jersey City, N. J. • Toronto, Ont.

MAIL COUPON NOW!

R. M. Hollingshead Corp. *(Industrial Division)*
840 Cooper Street, Camden, N. J.
I am interested in the products checked:
☐ Floor Waxes ☐ Pine Cleaners
☐ System Soap ☐ Degreasing Compound
Name_____
Address_____
City, State_____
By_____

Here at
WAX
HEADQUARTERS

Carnauba

Refined in our Jersey City plant.
THREE EXCELLENT GRADES
Nos. 520 • 352 • 580

•

Candelilla

Crude

Candelilla

Double Refined

Foreign matter removed, insofar as is humanly possible. Not tacky.

ANNOUNCING OUR NEW BRANCH IN CINCINNATI

To take care of our increasing business in southern Ohio, Indiana and Kentucky, and to still better serve our customers in this territory, we will open a Cincinnati Branch early in September. The address will be Carew Tower and this office, a subdivision of our Cleveland Branch, will be in charge of Mr. Robert D. Kane, formerly of our Cleveland Office.

INNIS, SPEIDEN & COMPANY
Established 1816
A National Institution
117-119 Liberty Street • NEW YORK
CHICAGO • CLEVELAND • CINCINNATI
BOSTON • PHILADELPHIA • GLOVERSVILLE, N. Y.

RAW MATERIAL MARKETS

As of August 29, 1941

NEW YORK—Supply shortages and lack of offerings of many imported raw materials for the manufacture of soaps and sanitary products, due to uncertainty of future shipments, featured the market during the past month. Spot offerings are light on certain of the fatty stocks including coconut oil, palm oil, and greases. In general, prices of fats and oils are higher than they were a month ago. In the essential oil and aromatic chemical market, continuing advances in quotations reflected the extremely high demand and the inability of dealers and producers to build up their stocks of aromatics or natural products. The market for insecticide organic raw materials remained about the same as a month ago, pyrethrum being basically unchanged in the face of active demand. Ample supplies of pyrethrum are being reinforced by large arrivals from Kenya. Candelilla wax became more costly during the month, while all grades of carnauba wax were reduced slightly from the quotations of last month.

Among the coaltar chemicals and solvents, inquiries exceeded supplies in many instances and shortages of cresols, cresylic acid, phenols, naphthalene and tar acid oils were unrelieved. The scarcity of sodium fluoride became very acute. It was announced that a general price advance of about ½ cent a pound on carbon tetrachloride would become effective September 1. This item is extremely hard to get unless contracted for.

Vegetable Oils

Offerings are light on many of the imported vegetable oils, and in some instances, suppliers are not offering at all. Crude coconut oil remained unchanged in price during the month at 7¼ cents a pound in tanks, N. Y., spot, and 7 cents a pound for future shipment. Futures on the Pacific Coast are currently 6½ cents a pound. Offerings are light on copra, the price of which has been advanced during the month to a nominal quotation of $4.00 a hundred. In the case of babassu oil, on which current quotations range from 9¾ cents to 10 cents a pound, suppliers are generally unable to offer because of the lack of shipping space for the oil on vessels coming from Brazil. Palm oil, likewise, is not being offered to consumers freely due to supply shortages and uncertainty of replacements. Sumatra oil was recently reported sold at 7⅜ cents a pound, spot, in tankcars, an advance of almost 1 cent a pound over a month ago. Bulk Sumatra palm oil for distant shipment is currently 4¾ to 5 cents a pound, with many suppliers not offering. Palm kernel oil on the Pacific Coast, f.o.b., tankcars, is nominally 7 cents a pound; small lots have been sold recently as high as 7¾ cents a pound.

The fatty acids are in active demand and most prices have been revised upward. Castor oil fatty acids and lauric acid and others are said to be in fairly active demand from soap makers. Teaseed oil became scarcer and in higher demand during the month, the price being advanced to 24 cents for the crude material.

CHECK OIL & FAT SPECULATION
Action to eliminate speculative practices that tend to disrupt the price structure of the fats and oils market was announced August 29 by Leon Henderson, OPACS administrator. Four specific corrective measures were ordered. Purchase of fats and oils purely for speculative resale is prohibited. Deliveries against forward purchases must be completed within 45 days. Guarantees by sellers against future price declines are eliminated. Circulation of fictitious price quotations by offering thru brokers subject to seller's confirmation is to be stopped.

Animal Fats

Inedible tallow remained unchanged in price until the latter part of August when quotations were advanced ¼ cent. Extra is currently quoted at 8⅛ cent, f.o.b., New York. Demand is said to be improved for small and moderate lots, with larger buyers holding off generally. Yellow grease was advanced ½ cent during the month to the current level of 7¾ to 7⅞ cents a pound. Offerings are reported to be light.

Essential Oils

Essential oils and aromatic chemicals continued to move in the only possible direction—upward,—as natural oils, particularly those from the Far East, became more difficult to obtain, and manufacturing troubles due to shortages of intermediates restricted production of aromatic chemicals. Reciprocal freezing of assets by the United States and Japan brought all commerce in eucalyptus oil, artificial sassafras oil, and other Japanese essential oils to an end. Oils from other parts of the Far East were also strengthened. Anise, cassia, oil of citronella, cananga and vetiver Java, all became scarcer. Other essential oils advanced during the month were natural peppermint, lavender spike oil, lemongrass, patchouli, bois de rose, and natural geranium oils. In addition the situation became tighter on pineneedle oil, petitgrain, linaloe, eucalyptus and cedar wood oil. Demand for imitation products became more pronounced.

SOAP MILLS OF LARGE PRODUCTION

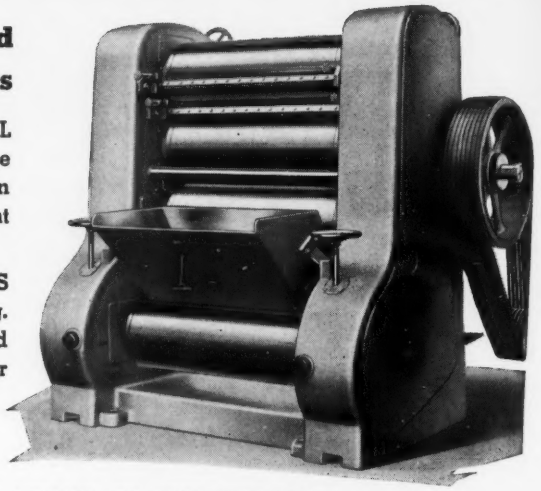
Lehmann Soap Mills Are Designed and Built to Do Many Difficult Jobs

Soap Flake Milling. The No. 912SA FIVE ROLL LEHMANN SOAP MILL (here illustrated) is a machine of large production and will give an exceptionally thin flake of uniform character and brilliant transparent appearance.

Toilet Soap Milling. LEHMANN FIVE ROLL MILLS can be arranged for automatic one operation milling. They produce the largest possible output of finest milled soap with efficient mixing. If desired the feed hopper can be arranged with two milling lanes. Can also be furnished with a *built-in intermediate plodder.*

Detailed specifications will be furnished upon request.

Demonstration by arrangement at our modern factory at Lyndhurst, New Jersey.



• **LEHMANN NO. 924SA FOUR ROLL SOAP MILL** corresponds in detail and operating features to the No. 912SA Five Roll machine shown above. It is useful for pre-milling or operating in tandem with the five-roll machine.

J. M. LEHMANN COMPANY, INC.
250 WEST BROADWAY NEW YORK, N. Y.

LEHMANN
The Standard for Quality in Machinery Since 1834

These *Important* oils... for soap perfumery

BERGAMOT GERANIUM LAVENDER

are supplied by "D & O" in synthetic form to replace the almost unobtainable and high priced natural oils.

The "D & O" standard of quality, so widely acknowledged in the natural oils, is reflected in these synthetic oils, which are carefully blended to make available in effective form the basic characteristics of the natural oils.

Write us for samples and prices

DODGE & OLCOTT COMPANY

180 Varick Street New York, N. Y.

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

D&O
ESTABLISHED IN 1798

RAW MATERIAL PRICES

(As of August 29, 1941)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .08½	$ .09
Acid, Boric, bbls., 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.78
Low boiling grade	gal.	.68	.78
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	6.02½	6.09
Complete Denat., SD1, dms., ex.	gal.	.33	.38
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	55.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.10¼	.10¾
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.14½	.15
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.15½	.16½
Soap, lye, drums	lb.	.13	Nom.
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, kegs	lb.	2.24	—
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid) drums	lb.	.13¼	—
Pine Oils, bbls.	gal.	.61	.65
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	—
Liquid, 45% basis	lb.	.02⅞	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.02¾	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	3.10	3.10
Grade I to N	100 lb.	3.09	3.24
Grade WG to X	100 lb.	3.37	4.56
Wood, ex. dock	100 lb.	2.60	3.43
Rotten Stone, pwd., bbls.	lb.	.12¾	.18¾
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.28	.38
Olive Castile, powder	lb.	.33	.40
Powdered White, Neutral	lb.	.24	—
Olive Oil Foot, bars, 68-70%	lb.	—	—
Green, U.S.P.	lb.	.09	.10
Tallow Chips, 88%, car lots	lb.	.09½	—
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	14.20	16.60
Sodium Fluoride, bbls.	lb.	.08	.09¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.29½
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.85	3.60
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	—	Nom.
Castor, No. 1, bbls.	lb.	.11¾	.12¾
No. 3, bbls.	lb.	.11½	.12¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.07¼	Nom.
Tanks, Pacific Coast, futures	lb.	.06½	—
Copra, bulk, coast	lb.	.0400	Nom.
Corn, tanks, West	lb.	.12⅝	.13
Cottonseed, crude, tanks, mill	lb.	.11⅛	.11¼
PSY, futures	lb.	.12½	.12¾
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.15¼	.15¾
Cotton Oil, tanks, Chicago	lb.	.13¼	.13½
Settled soap stock, Chicago	lb.	.03¼	.03½
Boiled soap stock, 65%, Chi.	lb.	.04¼	.04½
Foots, 50%, Chicago	lb.	.03½	.03¾
Red Oil, bbls., dist. or sapon.	lb.	.11½	.12
Tanks	lb.	.10¾	—
Stearic Acid, saponif.			
Double pressed	lb.	.13¾	—
Triple pressed	lb.	.17	—
Greases, choice white, tanks	lb.	.08¼	—
Yellow	lb.	.07¾	.07⅞
Lard, city, tubs	lb.	.11	—
Linseed, raw, bbl.	lb.	.1130	.1150
Tanks, raw	lb.	.1040	.1060
Olive, denatured, bbls., N. Y.	gal.	3.85	Nom.
Foots, bbls., N. Y.	lb.	.16¾	.17¼
Palm, Sumatra, cif. New York, tanks	lb.	—	Nom.
Palm, kernel, f.o.b. San F.	lb.	.07	Nom.
Soya Bean, domestic, tanks, crude	lb.	.09¾	.10
Stearin, oleo, bbls.	lb.	.09¼	.09½
Tallow, special, f.o.b. N. Y.	lb.	.08	—
City, ex. loose, f.o.b. N. Y.	lb.	.08⅛	—
Teaseed Oil, crude	lb.	.24	Nom.
Whale, refined	lb.	.1010	—

KRANICH

Specialists in

PURE POWDERED SOAPS

•

CASTILE, POWDERED
U. S. P.

•

COCONUT, POWDERED
Pure

•

COCO-CASTILE, POWDERED
50-50

•

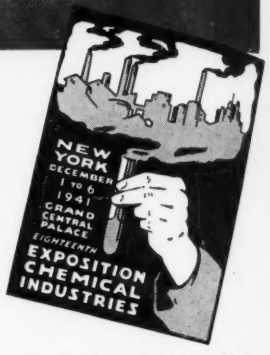
POTASH SOAPS

Liquid Olive Oil Soap Shampoo
Liquid Coconut Oil Soap Shampoo
Liquid Castile Soap Shampoo
Shampoo Base (Olive Oil & Coconut Oil)
Oil Soaps — Scrubbing Soaps

KRANICH SOAP COMPANY
56 Richards St. — Brooklyn, N. Y.

SOAPS

FOR SOAP INDUSTRY MEN *with* PROCUREMENT AND PRODUCTION PROBLEMS



NEVER before has the Exposition of Chemical Industries been able to do as much as it can this year to help busy men who are worried by procurement and production problems. By spending a few days at this year's Chemical Exposition, you can accomplish more than at any other time or place in the world —including your own office.

Three great floors of Grand Central Palace full of exhibits by the very top strata of suppliers—each of them devoting a week to the service of the chemical industries now when such service is so important—each making it easy for you to see the actual products displayed and demonstrated—each providing chemical and engineering specialists eager to welcome consultation and discussion.

AT THIS YEAR'S CHEMICAL INDUSTRIES EXPOSITION
DECEMBER 1-6, 1941

The largest number of exhibits in more than a decade... chemical processing equipment, appliances, instruments, chemicals and chemical products, materials and supplies.

The most varied, and helpful group of exhibits ever staged for the benefit of the chemical process and related industries.

Exhibits staged by leading manufacturers who, by exhibiting, show that they are exerting their utmost efforts to serve industry.

Think what that means to you as a help in solving procurement and production problems!

Come to the Chemical Exposition — bring your associates. See that all your key men attend. It's the most important thing you and they can do at this time.

18th EXPOSITION OF CHEMICAL INDUSTRIES
GRAND CENTRAL PALACE, NEW YORK, DEC. 1-6, 1941
Managed by International Exposition Co.
DEDICATED TO SPEEDING UP AMERICA'S INDUSTRY FOR THE DEFENSE PROGRAM
536

(As of August 29, 1941)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$3.50	$3.75
Bitter, F.F.P.A.	lb.	4.75	5.00
Sweet, cans	lb.	1.75	1.90
Anise, cans, U.S.P.	lb.	1.20	1.25
Bay, 55-66% phenols, cans	lb.	1.00	1.35
Bergamot, coppers	lb.	20.00	Nom.
Artificial	lb.	2.95	9.25
Birch Tar, rect., cans	lb.	1.50	2.00
Crude, cans	lb.	.90	.95
Bois de Rose, Brazilian	lb.	3.50	4.00
Cayenne	lb.	—	—
Cade (juniper tar), cans	lb.	.72	.95
Cajeput, native, cans	lb.	.82	1.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	.27	Nom.
White, drums	lb.	.30	Nom.
Cananga, native, cans	lb.	9.50	10.00
Rectified, cans	lb.	10.25	11.00
Caraway Seed	lb.	10.50	Nom.
Cassia, Redistilled, U.S.P.	lb.	5.00	Nom.
Cedar Leaf, cans	lb.	1.03	1.38
Cedar Wood, light, drums	lb.	.28	.32½
Citronella, Java, drums	lb.	.85	1.00
Citronella, Ceylon, drums	lb.	.95	Nom.
Clove, U.S.P., cans	lb.	1.20	1.25
Eucalyptus, Austl., U.S.P., cans	lb.	.68	.73
Fennel, sweet, cans	lb.	2.50	2.75
Geranium, African, cans	lb.	16.00	Nom.
Bourbon, cans	lb.	17.00	Nom.
Turkish (Palmarosa)	lb.	3.15	3.50
Hemlock, tins	lb.	.95	1.25
Lavender, 30-32% ester, cans	lb.	—	—
Spike, Spanish, cans	lb.	2.65	3.25
Lemon, Ital., U.S.P.	lb.	5.50	Nom.
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	1.85	1.90
Linaloe, Mex., cases	lb.	3.25	3.40
Nutmeg, U.S.P., cans	lb.	2.15	2.65
Orange, Sweet, W. Ind., cans	lb.	4.75	6.00
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.60	—
California, expressed	lb.	3.00	—
Origanum, cans, tech	lb.	1.50	2.45
Patchouli	lb.	5.50	8.00
Pennyroyal, dom.	lb.	2.50	2.65
Imported	lb.	2.40	2.75
Peppermint, nat., cans	lb.	3.75	4.00
Redis., U.S.P., cans	lb.	4.00	4.25
Petitgrain, S. A., cans	lb.	1.45	1.55
Pine Needle, Siberian	lb.	2.00	2.10
Rosemary, Spanish, cans	lb.	.88	1.03
drums	lb.	.85	1.00
Sandalwood, E. Ind., U.S.P.	lb.	5.40	5.50
Sassafras, U.S.P.	lb.	1.05	1.20
Artificial, drums	lb.	—	—
Spearmint, U.S.P.	lb.	2.55	2.80
Thyme, red, N. F.	lb.	1.85	2.25
White, N. F.	lb.	1.95	2.50
Vetiver, Java	lb.	8.75	11.00
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.55	$1.60
Amyl Cinnamic Aldehyde	lb.	1.90	2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	Nom.
N. F. VI	lb.	.85	.95
Benzyl, Acetate	lb.	.48	.55
Alcohol	lb.	.63	.68
Citral	lb.	3.00	4.00
Citronellal	lb.	1.50	Nom.
Citronellol	lb.	1.75	Nom.
Citronellyl Acetate	lb.	4.00	Nom.
Coumarin	lb.	2.75	3.25
Cymene, drums	gal.	1.25	—
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	.90	.95
Eugenol, U.S.P.	lb.	2.00	2.10
Geraniol, Soap	lb.	.90	1.35
Other grades	lb.	1.50	2.50
Geranyl Acetate	lb.	1.50	2.50
Heliotropin	lb.	3.00	3.40
Hydroxycitronellal	lb.	3.90	Nom.
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.90	1.07
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	2.90	4.25
Linolool	lb.	5.00	7.50
Linalyl Acetate	lb.	3.00	Nom.
Menthol	lb.	7.00	Nom.
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	—	—
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	3.75	4.20
Ketone	lb.	3.90	4.35
Xylol	lb.	1.15	1.55
Phenylacetaldehyde	lb.	4.00	Nom.
Phenylacetic Acid	lb.	1.55	1.95
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	30.00	35.00
Safrol	lb.	—	—
Terpineol, C.P., drs.	lb.	.27	—
Cans	lb.	.30	—
Terpinyl Acetate, 25 lb. cans	lb.	.80	.85
Thymol, U.S.P.	lb.	—	—
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.45	1.50

Insecticide Materials

Insect Powder, bbls.	lb.	.20	.25
Pyrethrum Extract			
5 to 1	gal.	1.10	1.15
20 to 1	gal.	4.25	4.40
30 to 1	gal.	6.35	6.55
Derris, powder—4%	lb.	.26	.32
Derris, powder—5%	lb.	.29	.35
Cube, powder—4%	lb.	.26	.31
Cube, powder—5%	lb.	.29	.34
Squill, red, dried	lb.	.47	.75

Waxes

Bees, white	lb.	.47	.50
African, bgs.	lb.	—	—
Refined, yel.	lb.	.42	.43
Candelilla, bgs.	lb.	.32	.33
Carnauba, No. 1, yellow	lb.	.83	.84
No. 2, N. C.	lb.	.76	.77
No. 3, Chalky	lb.	.73	.74
Ceresin, yellow	lb.	.12½	.17
Montan Wax	lb.	No Prices	
Paraffin, ref., 125-130	lb.	.0570	—

LET US HELP SOLVE YOUR PURIFICATION PROBLEMS IN OUR LABORATORY

Pick up the phone, call our nearest sales office and request that one of our salesmen call on you to discuss the removal of color and odor from your oils to be used in Soap. To help you solve your purification problems, we maintain a Carbon Research Laboratory with no obligation for use of its services.

We may not have a feasible solution for you immediately, but our purification experts will work on your problem in our Carbon Research Laboratory and will offer helpful suggestions. It is then a relatively simple procedure to translate our findings into actual plant operation.

Tests in our laboratory indicate that NUCHAR Active Carbon has practically unlimited possibilities for the economical removal of odor, color and taste. Consult us on your next purification problem.

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP & PAPER COMPANY

230 PARK AVENUE
NEW YORK CITY

35 E. WACKER DRIVE
CHICAGO, ILLINOIS

748 PUBLIC LEDGER BLDG.
PHILADELPHIA

844 LEADER BLDG.
CLEVELAND, OHIO

PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Notes on Shaving Soap

THE requirements of a good shaving soap are that it have sufficient softening action on the beard, be non-irritating to the skin, and non-corrosive to razor blades, properties which are not always realized in practice. Hair softening is of first importance. It can only be brought about by a swelling of the hair keratin, such as may take place by the action of slightly alkaline soaps. Those shaving products which are based on an emulsion of unsaponified fats have very little action of this kind. Also because of their insolubility in water, they stick to the razor, making it difficult to clean. Although directions have been given to rub the residue of the cream into the skin, this is not to be recommended.

Fat-free substitutes are also unsatisfactory. Their virtues are of a negative type in that they can be made non-irritating and non-corrosive, but at the same time they are of little benefit to the shaving process. A really satisfactory substitute for shaving soap itself has not been found.

Lathering power is of great significance. Only by the relatively long period of contact which can be obtained with lather does the active ingredient present have a chance to affect the hair. Liquids which contain soap but which do not lather are lacking in wetting properties and are less satisfactory. In a study of the swelling power of a number of shaving soaps, those containing potash soap were found superior. Triethanolamine, as well as soap made with this as alkali, did not have the desired result. However, inclusion of small amounts of both triethanolamine and its soap brought about an improvement. Lathering power depends on the kind and quality of fats used, as well as on the alkali present. The presence of glycerin decreases lathering, so that the proportion of glycerin should never be more than 10 per cent.

Even with low alkalinity, shaving soaps may have an irritating effect on sensitive skins because of attack on the keratin of the skin by the alkali. On this basis substances need to be found which suppress the skin-irritant properties of alkali, without reducing its swelling power. Glycerin falls in this class, as do sodium and potassium lactates, and in a small measure even glucose. A similar effect is given by phenols, tannins, and capillary-active protein decomposition products which act as protective colloids. Of these compounds the phenols are objectionable both because of their odor and because of their toxic nature. Tannins cannot be used because of their marked effect on the swelling action, reducing it almost to zero. Protein decomposition compounds such as those formed by the decomposition of gelatin with alkali show the most favorable action, and also to some extent possess soap-like properties.

Not much attention has been paid to the action of shaving soaps on razor blades. Corrosion is to be avoided as far as possible. Shaving creams with a pH of about 9.5 were found to show the least attack on blades. Addition of small amounts of a chromate to render the blades passive proved inexpedient, since the chromium compounds caused rancidity to develop rapidly in the soap.

Not to be ignored is the kind of water available, which in most places possesses some degree of hardness. A number of soap makers now add stabilizing agents to shaving soap to prevent deposition of calcium and magnesium soaps, which would be particularly objectionable on the face. An addition of menthol is also recommended because of its cooling and freshening effect on the skin. Menthol possesses a certain amount of astringent and anesthetizing action, making shaving a less objectionable process.

Shaving soap sometimes turns yellow to brown due to the soap be-

coming rancid. Tin and zinc can cause this. Sometimes an odorant is added which has antioxidant properties, which helps stabilize the soap. H. J. Henk. *Deutsche Parfümerie Ztg.* **27,** 129-30 (1941).

Surface-active Agent

Normal-hydroxymethyl stearamide is caused to react with the addition product of trimethyl amine and chloroacetamide. The reaction takes place preferably in the presence of a solvent such as ethyl alcohol, acetone and glacial acetic acid. Such acids as hydrochloric, sulfuric or acetic can be used. The condensation product is a soft mass whose aqueous solutions are active in lowering surface tension. Soc. pour l'ind. chim. a Bale. Swiss Patent No. 209,637; through *Chem. Abs.*

Soap-Filled Metal Wool

Apparatus and methods are described for making fluffy metal wool strips into soap-containing ribbons to be used for cleaning purposes, which includes tensioning and widening the strip, and impregnating it, under tension and pressure, with an excess of hot fluid soap. As much excess soap is squeezed out as would destroy resilience of the strip when the soap is solidified. Heat is applied to dry the ribbon. Crosby Field, to Brillo Mfg. Co. U. S. Patent No. 2,240,114.

Solubility of Hydrocarbons

A study of the solubility of isobutane, butadiene, and propylene in water and in solutions of potassium oleate, showed that the solubility of the hydrocarbons was enhanced by the presence of the soap, which acted as solubilizer. This is one, but only one, of the important factors in detergent action. J. W. McBain and J. J. O'Connor. *J. Am. Chem. Soc.* **63,** 875-7 (1941).

Sodium Subsilicate

Sodium subsilicate having a $Na^2O:SiO^2$ ratio of 2:1, corresponding to the formula Na^4SiO^4, is highly suitable as a soap builder in commercial laundering. It has high buffer action in the pH range 10-11.6; loss of tensile strength after 20 washings using this builder, was less than 10 per cent; and whiteness retention of test pieces after 20 washings, was more than 94 per cent. Richard L. Davies and J. Stanley Hall. *Oil & Soap* **18,** 125-31 (1941).

SOAP DISCOLORATION

THE function of antioxidants in the prevention of discoloration of toilet soaps will be discussed by an expert in this highly specialized field in an article scheduled to appear in an early issue of SOAP AND SANITARY CHEMICALS. If soap spotting is a problem, perhaps the selection of the proper antioxidant will offer a solution.

Coal in Water Softening

A process for softening water consists of treating the raw water with lime to remove temporary hardness, then passing the water over sulfonated coal to remove free lime and calcium carbonate, and finally passing the water over a zeolite softener. The sulfonated coal is obtained by treating coal with a sulfonating agent until base-exchange properties have developed. R. Furness and H. J. Wheaton, to Joseph Crosfield & Sons Ltd. Canadian Patent No. 397,960.

Centrifuges in Oil Refining

In refining oils and fats, centrifuges can be successfully employed for precleaning the crude oils, in neutralization for the separation of the soap, for deoiling of soap stock, for separation of aqueous liquor during the washing process, for clarification of deoxidized oils, and for special applications such as the removal of "breck" from linseed oil. Donald G. Gillies. *Oil Colour Trades J.* **99,** 242-4 (1941).

Wetting Agent Studies

The properties of wetting agents of lowering interfacial tension in systems of given liquids against given solids can be studied through measurement of adhesion-tension values, which necessitates measurement of contact angles. Contact-angle measurements by the sessile drop method, of a given liquid upon different samples of the same solid, were made with an agreement within 1 degree. F. E. Bartell. *Ind. Eng. Chem.* 33, 737-40 (1941).

Measurement of Autoxidation

The Barcroft-Warburg apparatus may be used to study autoxidation reactions of various types in fats at 100° C. Refined cottonseed oil was found to be much less resistant to oxidation than sesame or corn oil. W. R. Johnston and Chas. N. Frey. Ind. Eng. Chem., *Anal. Ed.* **13,** 479-81 (1941).

Washing Agent

An emulsifying and washing agent contains a mixture of monophenyl-monoglycerol ethers substituted in the phenyl radical by one or two methyl groups, and hydrotropic substances such as soap, Turkey-red oil, naphthalene sulfonic acid; and hydrocarbons such as higher alcohols, phenols, terpenes or the products of their hydrogenation. Sandoz A.-G. German Patent No. 693,324; through *Chem. Abs.*

Olive Oil Substitute

Development of an American made product replacing olive oil for technical purposes, is announced by Werner G. Smith Co., Cleveland. This product, known as "Olev-ol," is made by separating the various fatty acids from domestic vegetable, animal, and marine oils, and recombining them in the proportions found in olive oil. This is said to result in a product which has the same physical and chemical characteristics as olive oil. *Textile World,* July 1941, p. 82.

Michigan Alkali Moves Branch

The St. Louis office of Michigan Alkali Co., New York, formerly at 972 Paul Brown Building, was recently moved to 913 Shell Building.

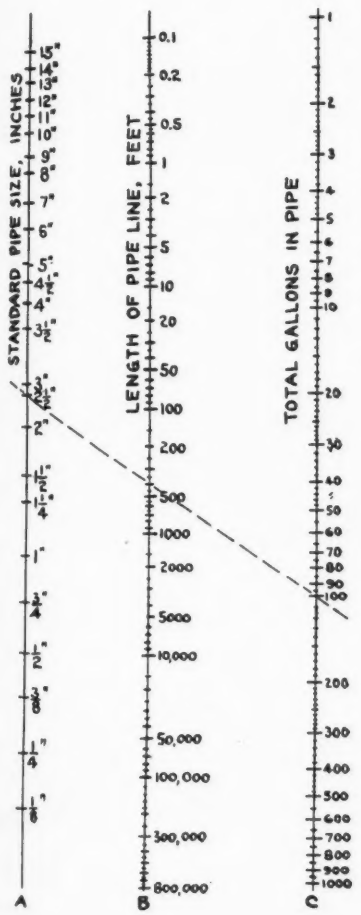
Volume of Pipes

A PLANT manager often wants to know the volume of a given length of pipe in gallons. The accompanying chart takes care of all standard pipe sizes from ⅛ inch to 15 inches, in column A, and any length of pipe line from 0.1 foot to 800,000 feet in column B. Column C shows volumes from 1 to 1,000 gallons.

To use the chart, simply run a straight line through the marks indicating the proper pipe size (column A), and the proper pipe length (column B). The intersection of this line with column C immediately gives the total number of gallons in the pipe line. Thus the dotted line drawn across the chart shows that if the pipe size is 2½ inches (column A), and the length of the line is 400 feet (column B), the volume of the pipe is 100 gallons (column C).

If it is desired to know the length of pipe line required to hold a given number of gallons, or the size of the pipe necessary to hold a given number of gallons, with a given length, the chart may also be applied. With any two factors known, the unknown in the third column is found by the intersection of a straight line through the other two points.

The usefulness of the scale can be extended by the use of decimals. For example, to determine the volume of a ½ inch pipe one foot long, the easiest way is to run a line through the ½ inch (column A), and the 10,000 length (column B). The intersection with column C says 160 gallons, but that of course is for a pipe line 10,000 feet long. By merely pointing off four decimal places to the left, we have 0.016 gallons as the volume of a ½ inch pipe one foot long. *Laundry & Dry Cleaning J. of Canada*, July 1941, p. 14.



New Detergent

From 35 to 90 per cent of a salt such as sodium sulfate, borate or phosphate, is used with a surface-active material prepared by treating a saturated aliphatic hydrocarbon material such as a white mineral oil in a liquid state at a temperature of 30-100° C. with a gaseous mixture of sulfur dioxide and chlorine. The resulting product is hydrolyzed with caustic alkali solution. Cortes F. Reed. U. S. Patent No. 2,239,974.

Refining, Inc. Sues P & G

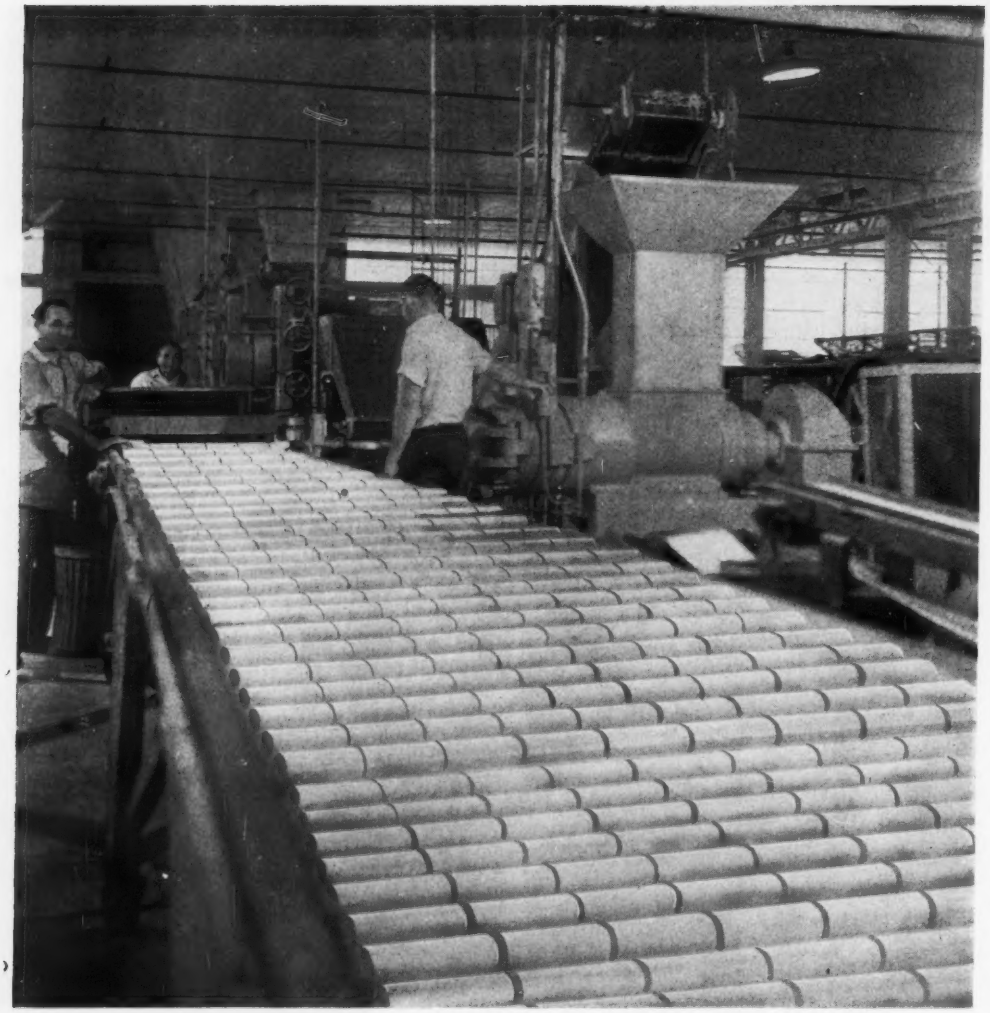
An action by Refining, Inc., charging Procter & Gamble Co. with violation of one of the Clayton patents (U. S. No. 2,100,274) for the refining of vegetable oils, came to trial late in July before Judge Luther B. Way in the U. S. District Court for the Eastern District of Virginia at Norfolk, Va. Under this particular patent Refining, Inc. have issued royalty licenses to many refiners of vegetable oils, particularly cottonseed oil. Several large refiners, however, including Procter & Gamble Co., have refused to take licenses on the centrifugal refining process, claiming that the process is old and well known. During the course of the trial the court adjourned to the Portsmouth plant of Procter & Gamble Co. where the alleged infringing operations were observed. Technical and engineering experts were E. P. Stevenson for the plaintiff and Alan Porter Lee for the defendant. The court will hear final arguments on October 27. The final decision in the case may not be handed down for a period of several months, it is anticipated. The Clayton patent for the continuous manufacture of soap is not involved in the present action.

Denatured Alcohol Use 1939-40

Statistics on the uses of specially denatured alcohol during the fiscal year ended June 30, 1940 have just been released by the United States Treasury Department. Those relating to soaps and sanitary products are given below (in gallons).

Product	*No. of permittees*	*Amount Used— New*	*Reused*	*Amount Recovered for Reuse*
Shampoos	170	224,821	....	....
Toilet soaps (inc. shaving creams)	88	40,293	....	....
Mouth washes	344	823,431	....	....
Dentifrices	56	118,659	....	....
Cleaning preparations (inc. cleaning operations)	272	240,332	8,378	16,704
Deodorant sprays (non-body)	46	53,042	....	....
Disinfectants, insecticides	106	41,060	190,304	191,415
Industrial soaps	11	15,627	2,433	....

Cascades of Soap Flow from HOUCHIN PLODDERS and CUTTING TABLES



Speed and precision are what you want most in soap making. Houchin plodders and cutting tables reduce the time between the mills and the presses, increasing hourly production of all kinds of soaps substantially.

Houchin soap making machinery is used by leading manufacturers because it is fast, efficient and extremely durable.

Let us study your soap making layout. We may be able to lower production costs and increase your profits.

HOUCHIN MACHINERY CO., INC.

Fifth and Van Winkle Avenues

HAWTHORNE **NEW JERSEY**

PRODUCTS AND PROCESSES

Hard-water Soap

A soap which does not form a curd in either cold or hot hard water contains 40-60 per cent of water-soluble soap, 10-40 per cent of water-soluble phosphate salts, and 2-15 per cent of organic sulfate. Such mixtures show a high detergent efficiency in washing operations in hard water. Iron staining is also prevented. Colgate-Palmolive-Peet Co. British Patent No. 535,809; through *Perfumery & Essential Oil Record* 32, 177-80 (1941).

Soap Plodding

In a process for plodding milled soap to form a homogeneous bar, the soap is de-aerated under superatmospheric pressure, kneaded, and forced toward an extrusion orifice against opposing superatmospheric de-aerating pressure. The soap passes through an unobstructed elongated welding zone in its path to the extrusion orifice. The de-aerating pressure is greater than that required for extrusion alone. Bruce Strain, to Procter & Gamble Co. Canadian Patent No. 398,321.

Cold Process Soap

Fatty acids, tallow, resins, detergents and water are worked up in a colloid mill or in similar apparatus, to form a homogeneous dispersion. This is then worked in a kneading machine, where the mixture is saponified with the proper amount of caustic alkalies. Hermann Plauson. German Patent No. 693,241; through *Chem. Abs.*

Detergent Aids

Detergent aids are prepared by polymerizing normally gaseous olefines into liquid products having a molecular weight of 100-224, causing these to react with a phenol and an amount of sulfuric acid sufficient to form sulfuric acid derivatives of the resulting alkyl phenols, at a temperature not over 80° C. The product is completely neutralized with an alkali to produce salts. Louis A. Mikeska, to Standard Oil Development Co. Canadian Patent No. 397,956.

Soaps from Petroleum

In the preparation of fatty acids or soaps from petroleum and similar nonaromatic hydrocarbons, the oxidation products of such hydrocarbons, free from hydroxy fatty acids and lactones, are heated under increased pressure with an equal or greater weight of water. Heating may be for 1 hour at 320° C. at a pressure of about 100 atmospheres. The pressure is lowered in stages, with further heating. Unsaponifiable constituents distill off with the steam, can be recovered, and subjected to oxidation again by combining with a fresh batch of starting material. The soap obtained is in an anhydrous molten state and after cooling and chipping can be worked to soap powder or into curd soap. I. G. Farbenind. A.-G. German Patent No. 684,968; through *Fette und Seifen* 48, 232 (1941).

Soap from Soap Scrap

Scrap soap may be employed with advantage in a cold process. After the oil or fat has been introduced into the kettle, a small quantity of a solution of soda ash (20° Be.) or of weak caustic soda solution (12° Be.), is mixed in. The scrap soap is then added before the addition of the bulk of the stronger caustic alkali. Oil or fat treated in this manner, and the scrap, form a uniform mass without bunching, since the free fatty acids of the oil have been neutralized, and the oil is protected from the initial attack of the strong caustic. A close, light-colored soap with an excellent grain is obtained. It is possible by the process to add any quantity of scrap soap up to 75 per cent of the total charge of finished soap. The process is rapid, usually taking no more than 40 minutes. A. W. Keeble. British Patent No. 534,809.

Neutral Liquid Shampoo

A simple method of control in preparing a neutral shampoo liquid is as follows: Dissolve 5 cc. of dilute liquid or 5 grams of concentrated jelly-like shampoo in neutral alcohol. Titrate to neutrality with 0.1 N. potassium hydroxide solution or 0.1 N. acid, as required. If off appreciably on either side, calculate the amount of lye or oil required for neutralization, and add these to the kettle. Continue boiling, and repeat the analysis. If near neutral on the alkaline side, and a clear appearance indicates little or no free oil, boiling may be continued without any adjustment. If a sample removed later, checks the previous result, the reaction has gone to completion. Ralph H. Auch. *Am. Perfumer* **43**, 25-7 (1941).

Soapless Shampoo

As the active ingredient in a shampoo, use is made of a water-soluble salt such as the ammonium or monotheanolamine salt of the sulfonic esters of monoethanolamide of the coconut-oil fatty acids. This is in water, and has a high suds-producing power, being also resistant to calcium and said to be non-injurious to the hair and scalp. It is claimed free alkali is not formed. The preparation has detergent power and remains liquid in concentrated solution. John W. Orelup. U. S. Patent No. 2,237,629.

Powdered Washing Agent

To a hot mixture of water-glass, soda and alkali phosphates in water is added an aqueous solution of cellulose ether. The whole is stirred while cold air is blown through it until it solidifies. The solidified mass is powdered. Kalle & Co. Akt.-Ges. German Patent 693,088; through *Chem. Abs.*

Detergency of Built Soaps

Cloth soiled artificially with Norit C, lubricating oil (S.A.E. 30), and Crisco, was washed under varying conditions with 0.1 per cent of soap solution built with varying amounts of modified soda. The pH of the wash solutions was approximately 9.6, a value which remained nearly constant with a concentration of 0.1 per cent of soap and 0.006-0.4 per cent of modified soda. pH values are considered useless as a method of suds bath control, with this detergent solution. The authors recommend acid titration values, which vary directly with the concentration of modified soda, to control the suds bath in laundry practice. Detergency of the 0.1 per cent soap solution is improved by an addition of modified soda up to about 0.2 per cent of the latter, but diminishes with higher concentrations of this builder. With the type of standard soil used here, soil removal can best be determined by turbidity measurements. The rate at which the soil-removal capacity of a detergent solution is approached can be effectively studied by the use of a single wash Launder-Ometer experiment. Reflectivity values of standard soiled cloth are only an indirect measurement of soil content. Under the conditions used—other things being equal, the rate of soil removal is directly proportional to the residual removable soil content of the cloth. Thomas H. Vaughn, Anton Vittone, Jr., and Leslie R. Bacon. *Ind. Eng. Chem.* **33,** 1011-19 (1941).

—— ♦ ——

Perspiration Stains

Under normal conditions, perspiration at first reacts acid, but by the effect of air and oxygen gradually passes into the alkaline region. Although the composition varies, in general perspiration contains common salt, calcium, magnesium, and potassium phosphates and sulfates, and about 1 per cent of organic matter consisting of urea, fats, cholesterol, uric acid, acetic, formic, butyric, and lactic acids. Local changes of color on garments, caused by perspiration, may be removed by retouching. The fatty matter can be dissolved out by dry-cleaning fluids. Water-soluble substances can be removed with the aid of an acidified solution of some of the new detergents. Yellow borders left on white goods are largely removed by washing. The last traces can be bleached out. If garments cannot be treated with water, cleaning pastes are used. Kurialt. *Deutsche Farber-Ztg.;* through *Dyestuffs* **37,** 55-8 (1941).

—— ♦ ——

Hexalin Soaps

Hydrogenated phenols such as hexalin and methyl hexalin may be added to soaps in an amount up to 20 per cent, to give completely clear solutions which do not show precipitation even in a very dilute condition. These soaps are especially suited for application in the textile industry, as they are high in fat-dissolving power without the addition of soda ash. In hard water no precipitation of calcium or magnesium soaps occurs, since the alkaline-earth soaps are completely soluble in hydrogenated phenols. The products are not suitable as toilet soaps, because of their strong action in extracting fatty matter and also because of their odor. Hans J. Henk. *Deutsche Parfümerie-Ztg.* **27,** 106-7 (1941).

—— ♦ ——

New Water Treatment

A new method of softening water in which all minerals are removed from raw water, followed by a simple treatment to eliminate all traces of acids, is said to promise important progress in water-softening methods. Evaporation and other costly treatments to remove dissolved sulfates and chlorides, are avoided. In the new system, a manufactured carbonaceous substance known as "Catex," is employed in granular form to transform calcium and magnesium compounds into the corresponding salts of the "Catex" base. Like zeolite, this material possesses high base-exchange properties. Hydrogen exchange is also possible, with the formation of easily decomposed carbonic acid, thus reducing the solids content of the softened water. *Rayon Tetxile Mo.* **22,** 430-1 (1941).

Phases of Commercial Soap

In certain regions of composition and temperature, commercial soap can be treated as a single component, and comparison may be made of the phase-rule diagram in these regions with similar diagrams for single fatty-acid soaps. For isotropic liquid, liquid crystalline middle soap, soap-boiler's neat soap, superneat soap, and probably also the neat and subneat forms of anhydrous and nearly dry soap, the phase-rule behavior is qualitatively the same as that of single pure soaps. For other regions of the diagram some fractionation seems to occur. Solubilities of pure and commercial soap may be compared when characterized by T_s, the temperature of ready solubility which can be precisely defined by reference to the lower temperature boundary of moderately concentrated isotropic solution. As an example, for a palm oil soap, T_s is 52° C. Above this temperature as much as 30 grams of soap will dissolve in 70 grams of water. Only 2° C. below T_s, this solubility has fallen to 5 grams in 95 grams of water. While there is a wide spread in the values of T_s for the single soaps, those for the commercial mixtures, except for sodium olive oil soap, cluster in the range between 45° and 55° C. James W. McBain, Marjorie J. Vold, and John L. Porter. *Ind. Eng. Chem.* **33,** 1049-55 (1941).

—— ♦ ——

Salt Water Soap

Coconut oil soap or salt water soap can be reduced in cost by the inclusion of 15-25 per cent of the following:

	Parts
Potash	120
Sodium chloride	100
Sugar	40

These are dissolved in water and made to a 24° Be. solution. Suitable perfumes are:

		Parts
1.	Spike lavender	100
	Rosemary	50
	Sassafras	75
		Parts
2.	Citronella	150
	Peppermint	15
	Wintergreen	15
	Sassafras	15
	Lavendin	30

A. N. Ghose. *Indian Soap J.* **7,** 224-8 (1941).

FROM THE ORIGINAL PAINTING ESPECIALLY MADE FOR NIAGARA ALKALI COMPANY

TWO THREADS of yarn, if wound together correctly, usually possess greater strength than the sum total of both separately. With just such a result have the resources of the Niagara Alkali Company and Electro Bleaching Gas Company been combined. For more than three decades these two familiar names have represented services of a similar nature and they have served many industries well. Now they are united into *one* compact, strong, closely integrated organization which, because of the combination of manufacturing, research and personnel facilities, can serve customers of ***both*** better than ***each*** could separately. The organization is now known as the NIAGARA ALKALI COMPANY.

EBG Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

NEW PATENTS

Conducted by

Lancaster, Allwine & Rommel

Registered Attorneys

PATENT AND TRADE-MARK CAUSES

402 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,248,656, Metal-Washing Composition, patented July 8, 1941 by Paul G. Bird, Western Springs, Ill. A composition for use in removing grease and reaming compounds from the interior of boilers and the like, comprising approximately 30 parts by weight of tetrasodium pyrophosphate, 40 parts by weight of sulfite waste liquor solids.

No. 2,249,675, Apparatus for Making Soap, patented July 15, 1941 by Benjamin H. Thurman, Bronxville, N. Y., assignor to Refining, Inc., Reno, Nev. In an apparatus for making soap, the combination of: a receptacle for receiving a mixture of soap and glycerin and means for maintaining heat sufficient to vaporize the glycerin and to produce an anhydrous molten soap; means for withdrawing a stream of the soap from the receptacle; a plurality of purifying devices; means selectively delivering the soap from the separating means to the purifying devices to form a plurality of batches; means for adding a purifying agent to the purifying devices to purify the batches; heating means; means selectively withdrawing soap from the purifying devices and delivering this purified soap as a continuous stream to the heating means; and finishing means receiving the heated soap from the heating means for controlling the moisture content of the soap.

No. 2,249,676, Apparatus for Making Soap, patented July 15, 1941 by Benjamin H. Thurman, Bronxville, N. Y., assignor to Refining, Inc., Reno, Nev. In an apparatus for continuously making soap from a saponifiable material by reaction therewith of an aqueous solution of saponifying material, the combination of: a heating means providing an elongated reaction zone closed from the atmosphere; means delivering to the reaction zone proportioned quantities of the saponifiable material and aqueous solution of the saponifying material whereby saponification takes place in the reaction zone to form reaction products including soap; a separating means including a vapor separating chamber receiving the reaction products; means for heating the separating chamber; means for continuously removing vapor from the separating chamber at such a rate as to maintain a vacuum therein; means for continuously withdrawing a stream of soap from the separating chamber without impairing the vacuum, the means including a screw conveyor system with a plurality of conveyor passages and screws therein for continuously advancing the soap, at least two of the conveyor passages being angularly disposed relative to each other to intersect at an angle; and means for cooling the soap in the conveyor system.

No. 2,250,667, Polishing Composition, patented July 29, 1941 by Walter A. Hall, Flint, Mich., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del. In a polishing composition of the oil-in-water emulsion type, the combination of an emulsifying agent of the bodying type and a matting agent comprising essentially water soluble methyl cellulose.

New Concrete Dye for Floors

Wilbur & Williams Co., Boston, have just introduced a series of colored stains for concrete floors which are designed to overcome the usual objections to concrete floor paints. Known as "Dye-Crete," the stain, which comes in four colors, is said to penetrate deeply into the concrete where it cannot be lifted or worn off. Over the stain is placed an alcohol and grease-resistant enamel, "Dye-Crete Defensite Coating," which adheres solidly to the stained concrete, making a coating claimed to be unaffected by moisture, cleaning chemicals, oils, greases, etc.

Costa Rican Oil

Oil from the kernel of the royal palm, *Attalea gomphococca*, has the following constants: specific gravity 0.917-0.922, melting point 23.5° C., saponification number 249.6-255.2, refractive index at 40° C. 1.4511. The fat is 63.5-67.1 per cent of the weight of the nut. This oil is very similar to coconut oil and can replace the latter in any of its uses. R. C. Fernandez. Dept. nacl. agr., Costa Rica, bol. tec. No. 35, 7 pp. (1941); through *Chem. Abs.*

Perfuming Material Outlook

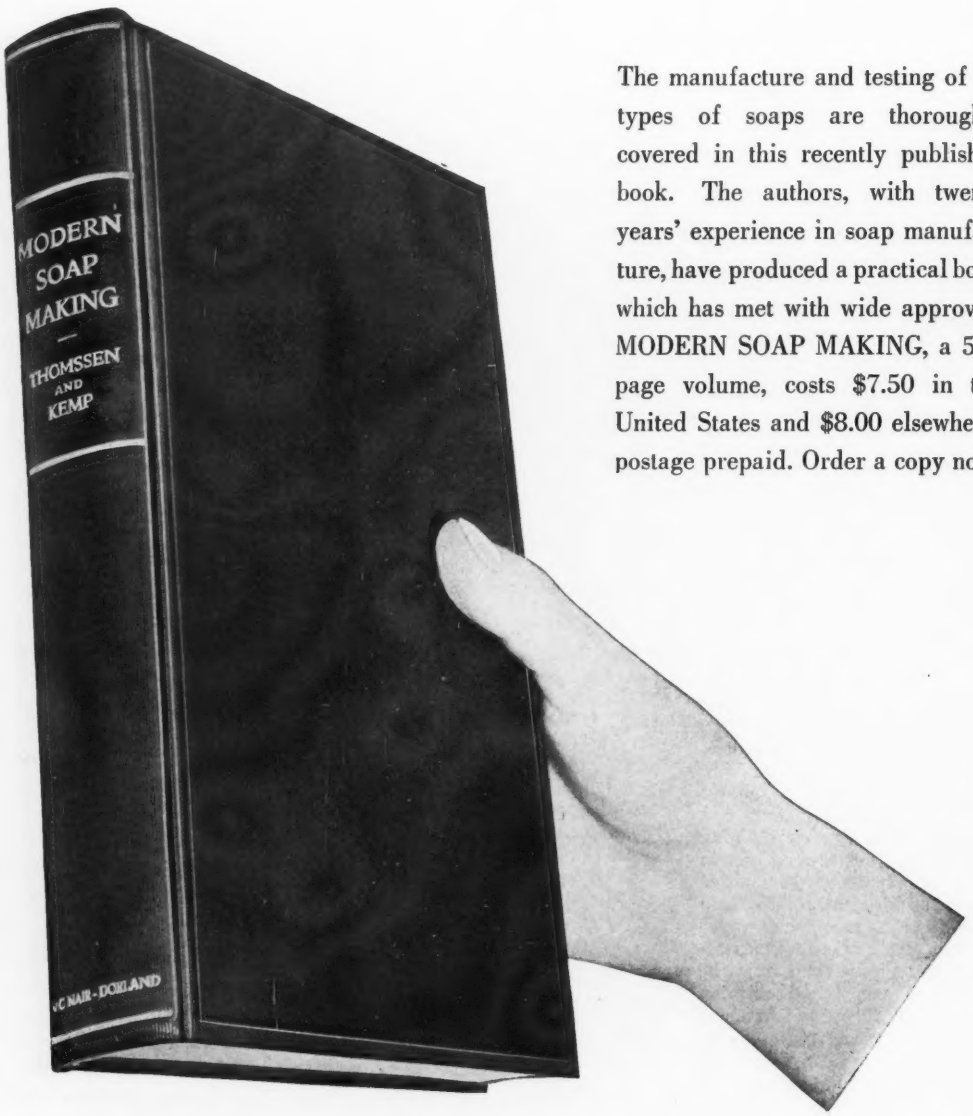
(*From Page* 29)

Siberian pineneedle oil is in a very tight spot at the present time, but whether additional supplies will come out of Russia bound for the United States hinges on the developments of the Russo-German war and also on the relationship which is established between the United States government and the U.S.S.R. Shipping news is so incomplete these days because of the secrecy which surrounds sailings that dealers are in the dark as to future supplies of imported articles. They do not know what supplies are afloat and are not sure of receiving replacements of any material until a shipment actually arrives.

Oil of Cassia

The current oil of cassia picture is tied directly to the tangled Far Eastern situation. Advancing prices and increasing scarcity of the material has been caused by Japanese activities on continental Asia where cassia is produced. Shipment facilities are almost nil, it appears. Those suppliers who have the material on hand are quoting prices between $4.20 and $4.85 a pound. A number of dealers have discontinued sale of cassia oil. Some cassia substitutes, likewise, although introduced by a few firms only recently, have also been discontinued as they are based on materials on which supplies are becoming short.

Every soap manufacturer needs a copy of this book!



The manufacture and testing of all types of soaps are thoroughly covered in this recently published book. The authors, with twenty years' experience in soap manufacture, have produced a practical book which has met with wide approval. MODERN SOAP MAKING, a 540 page volume, costs $7.50 in the United States and $8.00 elsewhere, postage prepaid. Order a copy now.

MAC NAIR-DORLAND CO., *Publishers*

254 WEST 31st STREET NEW YORK CITY

NEW EQUIPMENT

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

835—"Sterilamp" Bulletin

The Westinghouse "Sterilamp", ultra-violet lamp for industrial use, is the subject of a bulletin just brought out by United States Testing Co., Hoboken, N. J. A mercury vapor lamp operating on the gaseous discharge principle, the "Sterilamp" is recommended by its manufacturer for use in reducing the number of bacteria in the air in mills and factories to provide more healthful conditions for workers. Experimental installations have been worked out, it is said, for the control of mildew and bacteria in certain textile processes. Its low temperature operation is said to make it suitable also for use in refrigerated spaces.

836—Bactericide G-4

The *Givaudanian*, house organ of Givaudan-Delawanna, Inc., New York, in its latest issue, contains a review of tests recently conducted on bactericide G-4 which show it to be harmless to the human skin. Characteristics of the new product are described. It is recommended for use in manufacture of rubber products, such as bath mats, to render them antiseptic.

837—"Triton 720" Described

Rohm & Haas Co., Philadelphia, has just issued a new booklet which describes the properties and uses of the new Rohm & Haas synthetic detergent "Triton 720." The detergent is said to have a wide field of usefulness in general cleaning compounds such as car washes, floor and wall cleaners, etc. Its stability, high rinsibility and film removing properties are emphasized.

838—New Beauty Survey

Interesting data covering purchases of toilet and bath soaps, shampoos, dentifrices, mouth washes, etc. by readers of its publications are included in a survey just made public by Modern Magazines, New York. The annual family expenditure for toilet preparations by "middle class" families is indicated to be between about eighteen and twenty-seven dollars per year for income groups ranging from $1,250 to $3,000. Survey results include brand preferences, place of purchase, per cent use by age of purchaser, size of package bought, etc. Copies of the Survey of Beauty are available.

839—Swimming Pool Sanitation

A comprehensive treatise on swimming pool sanitation has just been published by Mathieson Alkali Works, Inc., New York. The 50-page book, "Keeping the Pool Safe and Sanitary," discusses all modern methods of purifying the water of different types of swimming pools, from the small private pool to large natural bodies of water.

P & G Celebrates Dividend Day

More than 10,000 persons attended the 108th semi-annual Procter & Gamble Co. Profit Sharing Divident Day celebration August 2 at Coney Island. The program, including athletic and aquatic events, was under the direction of general chairman Fred A. Brown, superintendent of the Ivorydale plant.

Cincinnati employees received in cash or dividends credits $223,000 for the six months ended June 30. The total for all plants and offices amounted to $536,000, an increase of nearly 5 per cent over the like period in 1940. The profit sharing plan is based on ownership of common stock upon which is paid not only quarterly dividends, but also a 5 to 15 per cent bonus, depending on length of service. Inaugurated in 1889, this plan has paid over $17,000,000 as added compensation to employees. The 7,500 participants either own outright, or have in their names, 165,000 shares of common stock valued today at about $9,900,000.

Adv. Research Appoints Smelser

D. P. Smelser, manager of market research for Procter & Gamble Co., has just been appointed a member of the new technical committee of the Advertising Research Foundation.

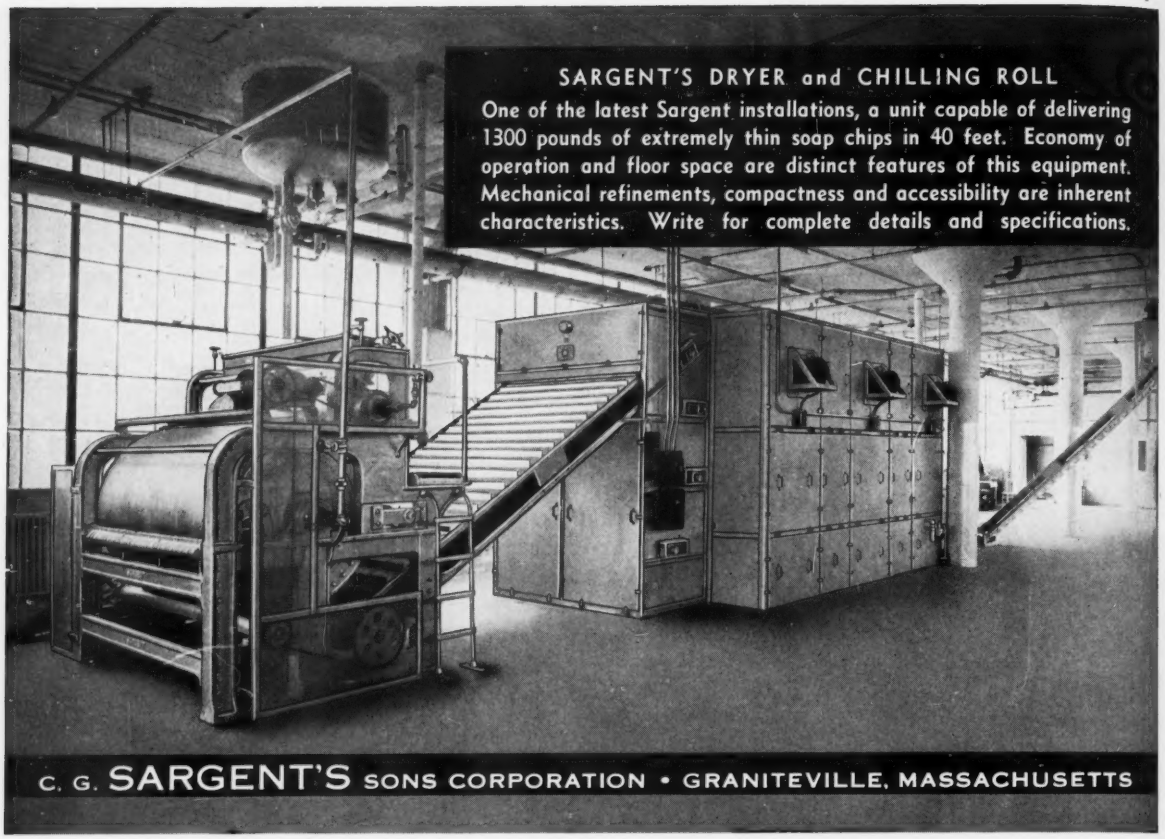
Record Soap Sales

(*From Page* 26)

sumption advanced to 184,118,000 pounds for the 1941 quarter, as compared with 151,000,000 pounds a year ago. This excess of consumption over production has cut coconut oil stocks as of June 30, 1941, down to 176,000,000 pounds, as compared with 202,000,000 pounds a year previous. At current consumption rates coconut oil stocks now on hand represent less than a three months supply.

Consumption of crude palm oil, 55 per cent of which normally goes into soaps, jumped in the second 1941 quarter to 73,000,000 pounds from the figure of 35,000,000 pounds registered in the second quarter of 1940. The net result was a drop in current stocks to 115,000,000 pounds from the total of 131,000,000 pounds on hand as of June 30, 1940.

On the grades of greases, approximately 70 per cent of which went into soap production last year, consumption jumped to approximately 110,000,000 pounds in the second quarter of 1941, as against roughly 75,000,000 pounds in the second 1940 quarter. Thus in spite of an increase in production in the second 1941 quarter, as compared with figures for the previous year, stocks were still some 10,000,000 pounds lower on June 30, 1941, than at the same point last year.


SARGENT'S DRYER and CHILLING ROLL
One of the latest Sargent installations, a unit capable of delivering 1300 pounds of extremely thin soap chips in 40 feet. Economy of operation and floor space are distinct features of this equipment. Mechanical refinements, compactness and accessibility are inherent characteristics. Write for complete details and specifications.
C. G. SARGENT'S SONS CORPORATION • GRANITEVILLE, MASSACHUSETTS

BOOKS

Modern Soap Making,
by Dr. E. G. Thomssen and C. R. Kemp. The first entirely original American book on soap manufacture in several years. Thoroughly covers every phase of soap manufacture and glycerin recovery. Written by practical soap men . . . a truly practical book. Chapter headings: Raw Materials; Machinery and Equipment; Soap Making Methods; Soap Products; Glycerin Recovery and Refining; Analytical Methods; Appendix with reference tables, etc. 450 pages. $7.50 per copy in U. S. Add 50 cents for foreign postage.

Henley's Twentieth Century Book of Recipes, Formulas and Processes.
A handy reference book listing 10,000 miscellaneous formulas, including special sections for soaps, polishes insecticides, etc. 800 pages, $4.00.

The Industrial Chemistry of Fats and Waxes,
by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages, $7.50.

Hydrogenation of Organic Substances,
by Ellis. Latest revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages, $15.00.

Laundry Chemistry,
by A. Harvey. A manual on the chemistry of laundry materials and methods. 120 pages. 5 x 7½. $1.75.

Pyrethrum Flowers,
by Gnadinger. A complete compilation of all known facts on pryethrum; its history, sources, evaluation, chemistry and uses. The problems involved in the manufacture of pyrethrum products are given thorough and lucid exposition. 396 pages, $5.00.

"Soap."
Bound volumes for years 1927-28, 1935, 1936, 1937 and 1938 available at $12.00 each.

Vegetable Fats and Oils,
by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods. $6.50.

Chemistry of Laundry Materials,
by D. N. Jackman. A useful book for the laundry operator, containing valuable information on the chemistry of laundry materials. Discusses alkalies, soaps, bleaches, starches, also the newer detergents, synthetic soaps, etc. 230 pages. $2.50.

The Chemical Formulary,
by H. Bennett. This latest edition carries 5,000 formulae all said to be different from those appearing in the first and second editions. 5½ x 8½. 550 pages. Price, $6.00.

Owing to the large number of books supplied it is impossible to open accounts on individual book orders or to supply books on approval. Please send check with order.

MAC NAIR-DORLAND CO.

254 WEST 31ST STREET **NEW YORK CITY**

Sulfonated Cleaning Agents

High-boiling mineral oils, coal tar, or other bituminous substances are mixed with aldehydes, such as stearaldehyde, olealdehyde, or lauraldehyde. The mixture is sulfonated with 50-200 per cent of chlorosulfonic acid. The water-soluble sulfonic acid is neutralized and, if desired, bleached. The sulfonates are yellowish powders, and are good cleansing and emulsifying agents. In an example, 18.4 parts of lauraldehyde are mixed with 25 parts of "Solar" oil. The mixture is treated with 16 parts of chlorosulfonic acid at 30° C. When the reaction ceases, the product is poured onto 25 per cent of its weight of ice, and neutralized with concentrated caustic soda solution. The unused hydrocarbon is distilled off with steam and the residue is dried. Oranienburger Chemische Fabrik Akt.-Ges. German Patent No. 693,769; through *Chem. Abs.*

Stearic Acid Substitute

A British firm is now offering a wax-like product which consists essentially of the fatty acids which have been obtained from fish oil, and which have been hardened. The product contains about 60 per cent of fatty acids, mainly stearic. The saponification value is 192.6, iodine number 21.8, melting point 49.5° C., and total fatty matter 99.8 per cent. *Perfumery & Essential Oil Record* **32,** 198 (1941).

Stabilized Hydrogen Peroxide

Hydrogen peroxide, so much used as a bleach, always contains impurities which catalyze the decomposition of the peroxide. The bleaching bath should therefore contain added materials to act as stabilizers. The most common stabilizing agents are compounds of magnesium, calsium, divalent and tetravalent tin, and phosphoric acid. The metal salts and hydrogen peroxide form metal peroxides which give off their extra oxygen only slowly in aqueous solution. To the most active stabilizers belong the primary and secondary salts of phosphoric acid, which form complex salts with hydrogen peroxide. An efficient stabilizer is the combination of alkali pyrophosphate with salicylic acid at a pH of the bath of 7-10. Also to the phosphates may be added alkali chlorides or silicates, or both. Chas. F. Goldthwait. *Textile Colorist* **63,** 343 (1941).

Esters in Glycerine

Glycerine from the first condenser of a Van Ruymbeke still may contain calcium salts of higher fatty acids, carried over by entrainment. Glycerine from the second condenser may contain higher fatty acid mono esters of glycerine. Both portions may contain esters of caproic and higher acids. B. Tyutyunnikov. Seifensieder-Ztg. **68,** 57, 70-1, 82, 92, 103-4 (1941).

Perborate Soap

Granular soap containing perborate is prepared by adding to the hot soap solution containing about 30 per cent of water, an aliphatic alcohol, cooling to 50° C. and adding perborate. Clemens Bergell. German Patent No. 693,026; through *Chem. Abs.*

Sodium Myristate

Sodium myristate and water have a phase diagram of the same type as that of other saturated sodium soaps and of sodium oleate and water. The effect of the chain length of the soap molecule on the phase diagram involves at least two opposing factors, the longer-chain soaps being less soluble at low temperature and low concentrations of soap, while at higher temperatures and high concentrations of soap the shorter-chain soaps are the less soluble. R. D. Vold, R. Reivere and J. W. McBain. *J. Am. Chem. Soc.* **63,** 1293-6 (1941).

Practical Washing Tests

A test soil was prepared by mixing (a) 30 grams of oil, 5 of lanolin, 1 of egg yolk, 1 of egg albumin, and (b) 250 grams of milk, 20 of cocoa, 2 of soot, 4 of starch and 10 of sugar. The second part is mixed cold, heated to boiling and diluted with 250 cc. of water. One part of the first (a) is blended with 9 parts of diluted (b). This mixture is applied to strips of fabric from which the sizing has previously been removed. The strips are then washed in an experimental machine, where the temperature is brought to boiling during a period of 30 minutes, then allowed to boil for 15 minutes. The whiteness of the washed cloth is measured with a Pulfrich photometer. Comparative results can be obtained with different detergents used in different concentrations. G. Gehm. *Seifensieder-Ztg.* **68,** 159-60, 170, 181-2 (1941).

Alkaline Washing Agents

Sulfuric or phosphoric acid esters of sulfonic acids of aliphatic alcohols are treated with substances yielding alkaline hydrolysis products so as to give in 0.2-0.5 per cent solution a pH value higher than 8.0. The viscosity of the preparation may be increased by adding water-soluble proteins, carbohydrates or protein solvents. Sandor Brand. Hungarian Patent No. 122,260; through *Chem. Abs.*

Sterilizing Oils

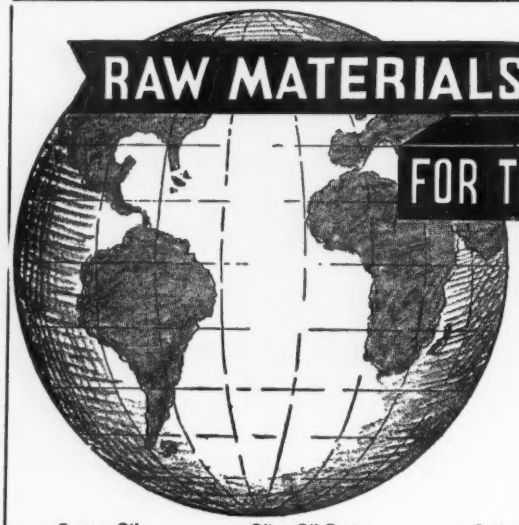
Fats, oils, fatty acids and mineral oils are sterilized as well as given sterilizing properties by bringing them in intimate contact with finely divided solids such as silver and copper. Katadyn G.m. b.H. German Patent No. 692,172.

Phenolic Invert Soaps

The following water-soluble "invert soaps" containing a free phenolic hydroxyl group were prepared from tertiary amines by treatment with methyl iodine. Joseph B. Niederl and Frank A. Abbruscato. *J. Am. Chem. Soc.* **63,** 2024 (1941).

Compound	*Formula*	*M.P. °C.*	*Nitrogen Anal. Calcd.*	*Found*
Methyl diethyl ammonium iodide	$C_{20}H_{36}NIO$	124-5	3.23	3.41
Methyl di-n-propyl ammonium iodide	$C_{22}H_{40}NIO$	135-136.6	3.06	3.04
Methyl di-n-propyl ammonium iodide	$C_{24}H_{44}NIO$	132-3	2.86	2.88

RAW MATERIALS 1838-1941



FOR THE SOAP INDUSTRY

Oils Fats
Chemicals
Fatty Acids
White Mineral Oils
Petrolatums

FROM ALL PARTS OF THE WORLD

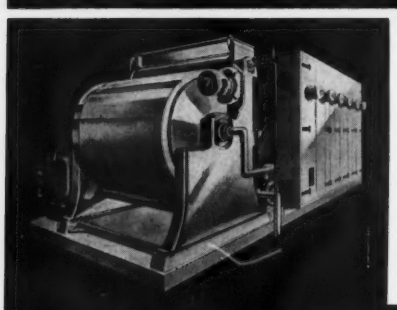
Dry Alkalies for Private Formulas Mixed for the Trade

Try this Welch, Holme & Clark Service

Castor Oil	Olive Oil Foots	Fatty Acids	Grease	Modified Soda
Cocoanut Oil	Peanut Oil	Lard Oils	Lanolin	Silicate Soda
Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
Palm Oil	Sesame Oil	Stearic Acid	Caustic Potash	Di Sodium Phosphate
Palm Kernel Oil	Soya Bean Oil	White Olein	Carbonate Potash	Chlorphyll
Olive Oil	Teaseed Oil	Tallow	Sal Soda	Superfatting Agent

WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET ESTABLISHED 1838 NEW YORK CITY



In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog, that is yours for the asking.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

NEW PROCTOR *Flake Soap* SYSTEM

Fatty Acid Determination

Using a method for fatty acid determination in which a standard amount of benzine was shaken with the acidified soap and the fatty acid content was calculated from the weight present in an aliquot, a considerable loss occurred when the method was applied to fatty acids. The losses for the fatty acids were butyric 84, caproic 14, caprylic and capric mixture 3-5, and capric 0.4 per cent. The average loss for coconut oil was 2 per cent. With soaps filled with clay the soap was first extracted for 6 hours with 95 per cent alcohol. Soaps containing carbohydrates were treated thus: 2 grams of soap were refluxed with 10 cc. of 25 per cent hydrochloric acid for 10 minutes. The mixture was shaken with 25 cc. of alcohol and 50 cc. of benzine; then 20 cc. of water were added and the mixture shaken vigorously. Fatty acids were determined on a 25 cc. aliquot of the benzine layer. J. Grossfeld. *Z. Untersuch. Lebensm.* **81,** 1-21 (1941).

Fat Decomposition

Fats and their decomposition products produced by rancidity must be isolated by suitable extraction agents before they can be studied. Because of its variable peroxide content ether is not suitable when the peroxide value of fat is to be investigated. Petroleum ether having a boiling point up to 45° C. is best for this purpose. Extraction should be done at temperatures under 65° C., since otherwise the peroxide content of the fat is increased. H. A. Schweigart and R. Heucke. *Vorratspflege und Lebensmittelforsch.* **2,** 189-200; through *Chem. Abs.*

Action of Bacteria on Fat

Schiff and Kreis tests were made on samples of triolein which had been acted on by pure cultures of bacteria, in order to compare the "oxidase reaction" of the individual cultures. Most of the Gram-negative lipolytic organisms also oxidized the fat. There appears to be a definite relation between the "oxidase reaction" of a bacterial colony and the ability of the organisms to produce oxidative rancidity. C. H. Castell and E. H. Garrard. *Can. J. Research* **19C,** 106-10 (1941); through *Chem. Abs.*

Chlorite-hypochlorite Bleach

The results of laboratory experiments and full-scale plant trials indicate that a mixture of sodium hypochlorite and sodium chlorite is superior for bleaching cotton goods to either straight calcium hypochlorite or straight sodium hypochlorite, because this mixture does not attack the fibers to form oxycellulose. Results show that goods bleached with sodium chlorite have greater fiber strength than those bleached with the ordinary chemical agents. The chlorite-hypochlorite solution is used in the same way as ordinary bleaching agents, and with the same equipment. Careful control of time, temperature and concentration to prevent damage to the fabric is not required. The bleaching power of this mixture is approximately equal to that of a chemical having twice as much available chlorine. G. P. Vincent, A. L. Dubeau and J. F. Synan. *Am. Dyestuff Reporter* **30,** P358-60 (1941).

Tobacco Seed Oil

Tobacco seeds contain 30-43 per cent of a pale green to brown oil which is largely linoleic acid. Some oleic and some saturated acids are also present, but no linolenic. After hardening, the oil is suitable for soap manufacture. H. P. Kaufmann. *Fette und Seifen* **48,** 193-5 (1941).

Igepon T Gel

Igepon T Gel is chemically similar to Igepon T powder and paste, but possesses only half their effective strength. It is a clear, amber colored, thin jelly which dissolves completely in hot water. For bulk work, stock solutions of 20-30 per cent strength are recommended. Like soap, stock liquors of Igepon T Gell tend to gelatinize when cold, but complete solution is restored by heating. The material is a powerful detergent and is stable to hard water, acids, alkalies, and bleach solutions. *Textile Colorist* **63,** 439 (1941).

Geranium Substitute

With a scarcity of essential oils, it is natural to turn to synthetics to a greater extent for perfuming soap. A good substitute for oil of geranium can be blended with the following synthetic bodies.

	Parts
Citronellol	15
Geraniol	27
Phenylethyl alcohol	15
Geranium oxide	5
Isobutyrate of geraniol	5
Rhodinol	15
Benzophenone	2
Geranyl propionate	5
Geranyl formate	5
C_9 aldehyde, 10%	1
Palmarosa	5

Geraniol has been used to some extent as a partial substitute for geranium oil. Although geraniol is the principal ingredient of the oil, it does not give the required strength. S. C. Sen Gupta, Jr. *Indian Soap J.* **7,** 229-33 (1941).

Fish Oil Fractionation

Winter oil from fish oil is heated at 280-300° C. with a small amount of sulfur as polymerization accelerator, under an inert gas with or without pressure. It is deodorized by superheated steam at a slightly lower temperature, treated with five volumes of acetone at 25° C., stirred well, and let stand for 10-20 hours. The lower layer, insoluble in acetone, is used as a raw material for paint. Acetone is removed from the upper layer, caustic soda added for neutralization, an equal amount of calcium chloride added, and the mixture heated at 80-100° C. for 1-2 hours with agitation. Moisture is separated by standing and the product decolorized with acid clay at 80-100° C., to give an edible oil. I. Noaki, Japanese Patent No. 133,614.

Gokizuru Oil

Ether extraction of the seeds of gokizuru yields 21.5 per cent of fatty oil, with constants: d_{15} 0.923, n_D^{20} 1.472, acid value 2.7, saponification value 195, Wijs' iodine value 125, and 1.2 per cent of unsaponifiable matter. The oil is semi-drying and may be used as an edible oil. S. Kawai. *Materials for Chem. Ind.*, Tokyo **14,** 18-23 (1941); thru Chem. Abs.

Laundering Colored Goods

A number of "fast colors" such as sulfur dyes, aniline blacks, etc., are more or less sensitive to the effect of too high a temperature or too high a degree of alkalinity. The temperature should not be allowed to go above 140° F. with this classification. There is a tendency in some plants to use much the same soap-alkali mixture for colored work as is used for white. This is especially true where a single built soap stock is employed for all purposes, and in the majority of cases, this leads to unnecessary fading of colors. It is true that in reducing the amount of alkali below a certain level, the detergency will suffer, and so it is necessary to arrange a compromise. Ordinarily the pH of the break and suds baths should not exceed 10.8. The temperature of the break can be adjusted to 115-20° F., with the pH not over 10.8. This can be followed by two suds at 130 and 140° F. without further addition of alkali, followed by the usual rinses and sours.

In normal white-work washing, the use of bleach and high washing temperatures effectively destroys bacterial life. It has also been shown that the souring operation is an excellent means of killing bacteria. It is therefore true in the fast colored classification, where no bleach can be used and where washing temperatures are limited to 140° F., that the responsibility of destroying bacteria rests largely on the inclusion in the formula of a souring operation. This should under no circumstances be omitted. C. H. Bayley. *Laundry and Dry Cleaning J. of Canada*, July 1941, pp. 8-10.

Fatty Acid Separation

Fish oils containing fatty alcohols or their esters, such as sperm oil, are freed of the components which solidify in the cold, as completely as possible. They are then treated with caustic alkalies or alkaline earths in an amount calculated to be the equivalent of the acid in the oil and not exceding it by more than 20 per cent. The mixture is diluted with 10-30 per cent by weight of water and heated to 200-300°C., preferably under pressure. The fatty acids are then separated from the soap formed. K. Henning, to Deutsche Hydrierwerke A.-G. German Patent No. 690,675.

Refined Tall Oil

By treatment involving heating a crude tall oil to 250-350° C., a refined tall oil is obtained from coniferous wood. The refined product is a smooth, uniform, oily liquid having an iridescent green color and an improved odor as compared with crude tall oil, and capable of prolonged standing without crystallization. The refined oil amounts to at least 95 per cent by weight of the weight of the dry crude tall oil, and contains the organic products of pyrolysis of the hydroxy abietic acid content of the crude tall oil. It is suitable for use in making soaps, printing inks, greases, rubber compositions, etc. H. R. Murdock, to The Champion Paper and Fibre Co. U. S. Patent No. 2,235,462.

Surface Tension Studies

The decrease of surface tension with time, of aqueous solutions of sodium laurate, was measured by the method of sessile bubbles at 25° C., with soap concentrations from 0.001 to 0.07 Normal, over a pH range of 7 to 11. At pH 11 and concentrations less than the critical concentrations for micelle formation, the surface tension falls gradually for several hours. The critical concentration for micelle formation in sodium laurate solutions under conditions of suppressed hydrolysis is about 0.02 Normal. The equilibrium surface tension depends on the concentration. The time effect largely disappears in micellar solutions.

With decreasing pH, the equilibrium surface tension and the time required to attain it diminish markedly. This result is thought due to the possibility of closer packing of fatty acid molecules than ions in the surface film, and the more rapid diffusion of non-ionized molecules into the surface region. G. C. Nutting and F. A. Long. *J. Am. Chem. Soc.* **63,** 84-8 (1941).

Hydrogenated Rice Oil

When an oil containing a considerable amount of free acids is hydrogenated the free acids are more rapidly hydrogenated than the oil itself. Hydrogenation of free acid is also more rapid than of esters other than glycerides. In the hydrogenation products of mixtures of oleic acid with oleic esters, the ratios of stearic acid to stearic ester were for the methyl ester 2.28-2.88, for the ethyl ester 3.09, for the propyl ester 3.58, for the butyl ester 3.82, for the isoamyl ester 3.90, and for the glyceride more than 4.

Rice oil of acid value 66.5 and iodine value 106.8 was purified with acid clay and hydrogenated at 180°C. with a nickel catalyst. The hydrogenation was stopped when the iodine value of the fat was 56.7; the iodine value of free acid of this partially hydrogenated fat was 11.2. The fat obtained was pressed at 30°C. and separated into 55.8 per cent liquid and 44.2 per cent solid, with respective acid values of 13.6, 129.3 and iodine values 75.2, 34.1. The liquid part can be used as a substitute for olive oil for textile purposes, or, when free acids are separated by alkali refining, can be used as an edible oil. The solid part is suitable as raw material for soap and candles. T. Tutiya. *Materials for Chem. Ind.*, Tokyo. **13,** 251-6; through Chem. Abs.

Silicate in Soap

Sodium silicate is still the most suitable filler for soap to reduce the fatty acid content. Because of its colloidal nature it has an emulsifying and adsorptive power not possessed by other alkaline salts. A siliceous silicate is mild as an alkali, and should have no harmful effect on fabrics. Silicate increases the wetting and the foaming power of soap solution. Because of its protective action against iron compounds in the water it has an indirect bleaching action. Another point which may not have been given consideration is that silicate prevents corrosion of aluminum ware, which is attacked by some alkaline cleaners. A. Foulon. *Deutsche Parfümerie-Ztg.* **27,** 94-5 (1941).

SANITARY PRODUCTS SECTION

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

DON'T KILL YOUR KILLING POWER

USE PYRISCENTS

It is now a well recognized fact that some perfumes reduce or completely destroy the killing power of sprays. The two basic undesirable features of ordinary perfumes are: Lack of complete solubility in oils, and unfavorable chemical reaction with Pyrethrum, which frequently manifests itself by a cloudy or dirty looking spray upon aging.

With these faults in mind, our entomologists collaborated with the Aromatics Division of DuPont to develop PYRISCENTS . . . the first insecticide perfume oils specifically compounded and thoroughly tested for chemical compatability with the active principles of Pyrethrum and Pyrin. PYRISCENTS (available in most any odor desired) are non-poisonous; *completely* oil soluble; maintain their full odor value and do not go "sour" upon aging; and *will not react chemically to kill your killing power.*

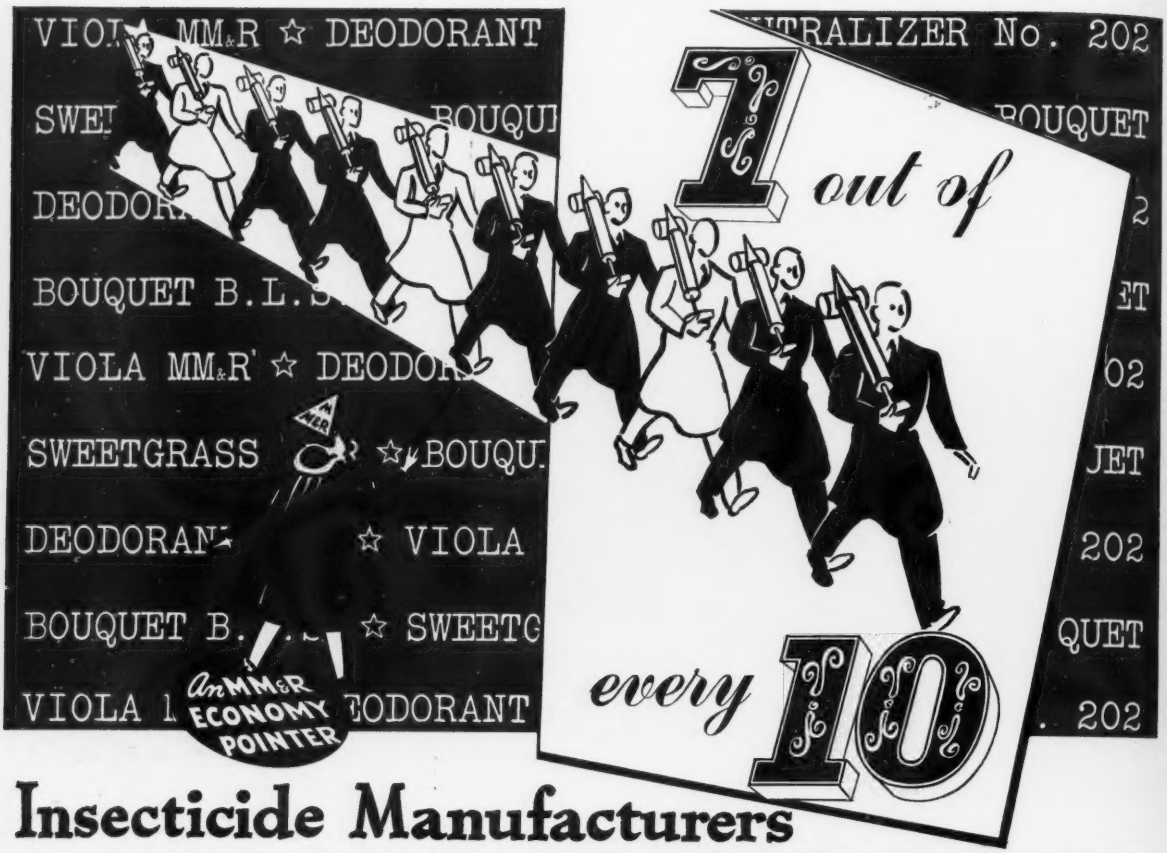
NO SHORTAGE OF STIMTOX

Pest Control Operators and compounders of roach powders facing a shortage of chemical insecticide materials should investigate Stimtox. This *fortified* pyrethrum powder is most economical and effective for the control of crawling insects.

Basic Pyrethrum Extracts — Pyrethrum Powders Rotenone Products.

For Pyrin (See page 79).

JOHN POWELL & CO., INC. *114 East 32nd Street, New York.*



Insecticide Manufacturers

who have told us how ~~much~~ LITTLE they could spend

for perfuming and deodorizing have found

to their profit that MM&R could do the

job BETTER and do it under the allowed production budget

SUGGESTION—Send us a sample of your unperfumed, undeodorized spray, tell us how little you have to spend, and our laboratories will return your samples deodorized and perfumed.

MAGNUS, MABEE & REYNARD, INC.

QUALITY ESSENTIAL OILS, BALSAMS AROMATIC CHEMICALS, ETC... SINCE 1895

16 DESBROSSES ST. NEW YORK, N. Y.

CHICAGO: 221 NORTH LA SALLE ST. CANADA: RICHARDSON AGENCIES, LTD., 454 KING ST., W., TORONTO

The General Sherman tree in Sequoia National Park. The largest and oldest tree in the world—280 feet high and 36½ feet in diameter.

Ewing Galloway

It's hard to improve on nature

PRENTISS CLARIFIED PYRETHRUM EXTRACT #20

It's a natural!

It's hard to improve on *natural* Pyrethrum especially when the price is *right* . . . Improvement in methods of growing and collection have reduced the cost of Pyrethrum one-third in two years so that it is now competitive with Synthetics.

We can now offer Prentiss Clarified Pyrethrum Concentrate No. 20 guaranteed to contain 2.0 grams Pyrethrins per 100 c c, in 55 gallon drums, at this new low price. It's worth your investigation.

THE R. J. PRENTISS & CO., INC. — THE WORLD IN BOTANICALS

R. J. PRENTISS & CO.

80 JOHN STREET, NEW YORK CITY

THANKS
For Your Business

. . . For Your Quick Acceptance of a Buyer's Opportunity!

SO MANY of you manufacturers have accepted the opportunity to buy Pyrocide 20 at its new low cost that a special thank you is in order.

The enlightened price policy, established by the Kenya Farmer's Association and their American agents, has turned what might have been a vexing problem into a problem solved.

Stabilized prices now make it possible for you to contract for delivery of Pyrocide 20 until September 1, 1942. This means assurance of your supply for another entire season.

Reduced prices—in the face of rising costs for practically every other commodity—mean that there will be no need to use pyrethrum substitutes.

Actually here's a break for the buyer, almost unique in the sellers' market of today. Using Pyrocide 20 you improve your product—get surer, quicker kill and greater killing power over a greater variety of insects—at a lower price!

Think of it! You make your insecticide at your price—using your old favorite, Pyrocide 20, in place of pyrethrum substitutes—and your supply is sure!

Write today for full particulars, and new prices, on contracts for delivery of:

PYROCIDE 20, DEODORIZED, CLARIFIED—Absolute top quality. Practically odorless except for the pleasant floral aroma of pyrethrum flowers. Will not stain curtains or wallpaper. The purest form of pyrethrins commercially available. Guaranteed to contain 2 grams of pyrethrins per 100 cc (Seil method). Now at new low prices.

PYROCIDE 20, REGULAR—The original chilled, filtered, standardized pyrethrum concentrate. Offered at 20c per gallon less than Pyrocide 20, Deodorized, Clarified.

McLAUGHLIN GORMLEY KING COMPANY • Minneapolis, Minnesota

REPRESENTATIVES

CHEMICAL SALES CORPORATION
1382 Niagara Street, Buffalo, N. Y.

W. B. LAWSON, INC.
Union Commerce Bldg., Cleveland, Ohio

LINDER & COMPANY
296 N. Beacon Street, Boston, Mass.

W. W. ANGUS, INC.
239 11th Avenue, New York, N.Y.

BAKER & GAFFNEY
12 South 12th St., Philadelphia, Pa.

K. LESTER WILSON
600 No. Eutaw St., Baltimore, Md.

L. H. BUTCHER COMPANY
15th & Vermont Streets
San Francisco, California

L. H. BUTCHER COMPANY
2030 Bay Street
Los Angeles, California

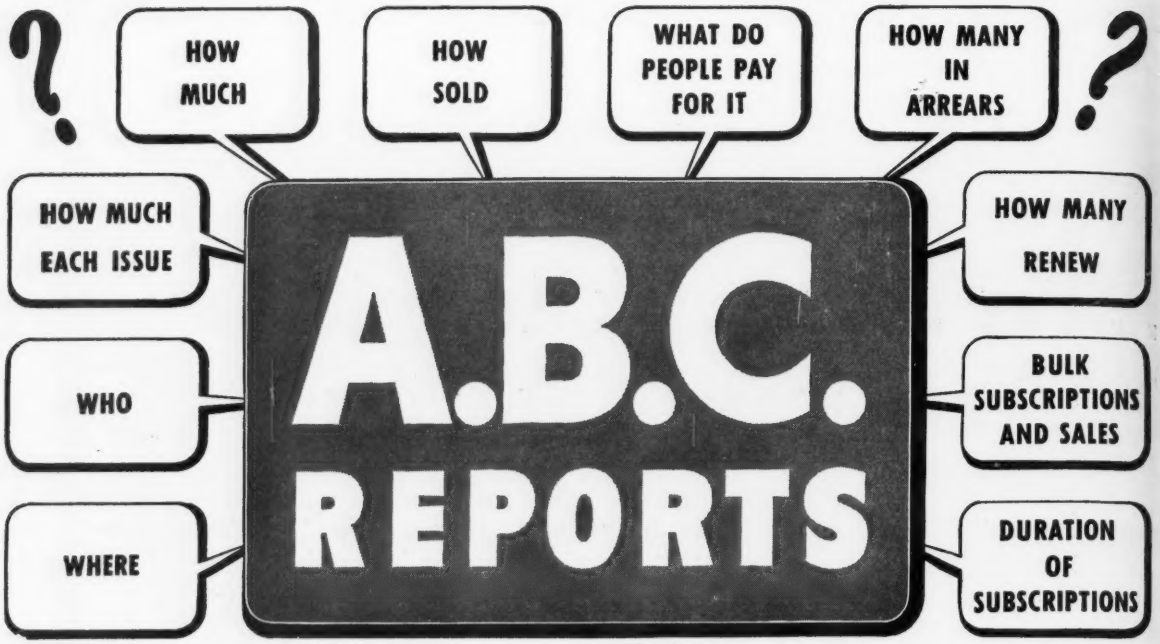
G. S. ROBINS & COMPANY
126 Chouteau, St. Louis, Mo.

WILLIAM J. HOUGH COMPANY
2445 West Congress Street
Chicago, Ill.; Fort Wayne, Indiana

WISCONSIN MINERAL SPIRITS CO.
1719 Eighty-Third St., Milwaukee, Wis.

COMMERCIAL CHEMICALS LIMITED
Vancouver, B. C., Canada

BARADA & PAGE, INC.
Kansas City, Missouri; Oklahoma City, Okla.; Tulsa, Oklahoma; Dallas, Texas; Houston, Texas; New Orleans, La.; Wichita, Kansas



In which we give All the Facts!

ADVERTISING in business papers, to do a job for you, must give specific and adequate information—but—

In addition to what you say and how you say it, the results depend upon to whom you are talking.

Fortunately, you can *select* your audience by making intelligent use of A. B. C. reports. Every business paper member of the Audit Bureau of Circulations can supply you with complete, verified facts about that paper's readers—your audience.

A.B.C. reports contain the specific information that advertisers themselves have requested as needed for effective space buying.

We belong to the A. B. C. Our A. B. C. report tells how much circulation, that is, how many people have expressed—through paid subscriptions—a definite interest in this particular editorial job; where this circulation goes; how we got it; how much subscribers pay; a business analysis of subscribers.

These facts and many other verified values given in A. B. C. reports will help you invest your advertising dollars most effectively.

A. B. C. PROTECTS YOUR ADVERTISING

Paid subscriptions, renewals, evidence of reader interest, are among many facts in A. B. C. reports that are definite guides to effective media selection. When you buy space in A. B. C. publications your advertising is safeguarded by audited circulation. Always ask for A. B. C. reports.

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET NEW YORK

Member of the Audit Bureau of Circulations ABC *Ask for a copy of our latest A. B. C. report*

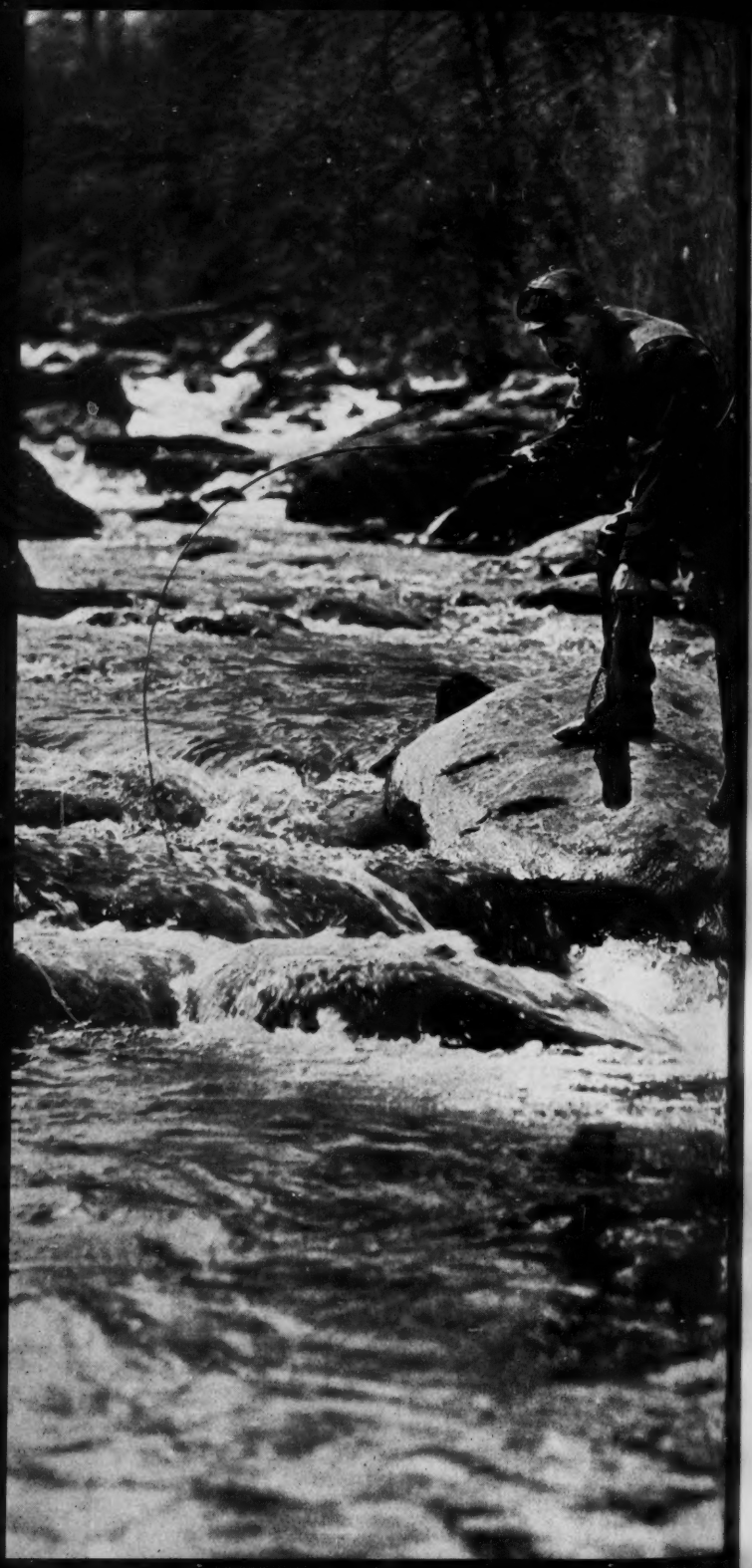
A. B. C. = AUDIT BUREAU OF CIRCULATIONS = FACTS AS A MEASURE OF CIRCULATION VALUES

KORK-N-SEAL

IS NOW *"ON THE JOB"* FOR A. L. WEBB & SONS

Among the firms whose names have been added to the lengthening list of KORK-N-SEAL users is A. L. Webb & Sons of Baltimore, Maryland. KORK-N-SEAL was chosen as a closure for Webb Shellac because it is not only a stout, efficient *seal*, but a tight, dependable *re-seal* as well . . . one that can be removed as easily the last time as the first! To learn how inexpensively the unique advantages of KORK-N-SEAL can be adapted to either glass or tin containers, write: Williams Sealing Corporation, Decatur, Illinois—*a division of Crown Cork and Seal Company*. The container illustrated is by Crown Can Co.

GOOD LUCK



We wish you lots of luck this season and hope your insecticide sales break all records. But if they're not quite up to par remember that odor has a lot to do with sales appeal. The one that's most pleasant to use is the one they'll buy again.

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVE. · NEW YORK CITY

GIVES YOU EXTRA VALUE

● In addition to giving your spray *plus kill* and *higher grade*, "Pyrin" gives you these extra safety factors:

"Pyrin" used as a spray is harmless to warm blooded animals. It does not irritate eyes or skin.

"Pyrin" has no disagreeable effect on nasal membranes. Its mild odor is easily masked with a number of perfumes.

Does your spray meet all these important requirements? Check this list of extra values and you'll see why "Pyrin" will give you a better spray at less cost, without requiring a change in your label or manufacturing procedure.

● "Pyrin" contains Du Pont IN-930 (isobutyl undecylenamide) and is manufactured by

TOXICITY—*plus kill*

STABILITY—*no breakdown*

SAFETY—*harmless, non-irritating*

ODOR—*mild, easily masked*

TASTE—*slight, does not contaminate*

STAINING—*none*

Your PYRETHRUM *Supply is* SAFE...

American ships making regular sailings direct from Kenya, British East Africa, are bringing in the adequate, new crop of KENYAPYE...

KENYAPYE

(MEANING KENYA PYRETHRUM)

NATURAL **SAFE** VEGETABLE INSECTICIDE

KENYA PYRETHRUM at present low prices will take the place of many chemical ingredients formerly used because they were cheap, which are now becoming unobtainable as needed in the program of National Defense.

LOWER STABLE PRICES Increased production has enabled the growers in Kenya, British East Africa, to make lower stable prices so you can use greater strength.

TELL YOUR TRADE that Kenya pyrethrum is the active ingredient of your Sprays and Dusting Powders—and watch your business grow.

Especially adapted to Household Pest Control

For roach control try a powder with Extra-strength Kenya Pyrethrins. Watch results without added sodium fluoride

TEST KENYAPYE AND LEARN OF ITS SUPERIOR QUALITIES

Designed for selling... built for service

If you are considering changes in your packaging set-up, we suggest you avail yourself of this complete packaging service offered by Anchor Hocking...

1. A COMPREHENSIVE LINE OF DISTINCTIVE GLASS CONTAINERS... whether your product is best suited to amber or crystal glass, you'll find just the right container—attractive, practical, convenient—in this extensive range.

2. THE WIDEST RANGE OF CLOSURES ON THE MARKET, allowing you free, unrestricted choice. You secure also the added advantages of many exclusive Anchor design and construction features plus the knowledge that Anchor dependability will protect you from profit-paring complaints and returns.

3. AN EXPERIENCED ADVISORY STAFF... including Package and Label Designers, Chemical and Biological Technicians, Production Engineers ...all ready to assist you in planning and putting into production a new package that will enable you to jump ahead of competition, measurably increase your sales and profits.

WILL YOU ACCEPT THIS INVITATION? We'd like to send you sample glass containers and suitable closures to meet your special requirements and have our consulting staff work with you in creating the "perfect" package for your product. Will you tell us how we may help you?

ANCHOR HOCKING GLASS CAPS

ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

TAR ACIDS

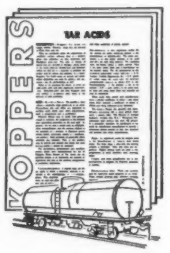
Cresol · Cresylic Acid

TAR ACID OILS

CRESOL—U.S.P. with a very close cut distillation range and light color, for pharmaceutical purposes —Meta-Para Cresol with high meta cresol content —Resin Cresols close cut to wide boiling with guaranteed meta cresol contents.

CRESYLIC ACID—Many distillation ranges appropriate for all established uses—pale color—clean odor—total impurities besides water not exceeding one-half of one per cent.

TAR ACID OILS—Frozen crystal free at O°C.—good emulsion forming properties—low benzophenol content—appropriate for low to high coefficiencies with tar acid contents as required.



Technical data sheets on "Tar Acids" and "Tar Acid Oils" are available on request. Write for your copies.

OTHER KOPPERS PRODUCTS: Shingle Stain Oil . . . Refined Tars . . . Pitch Coke . . . Industrial Coal Tar Pitches . . . Flotation Oils . . . Creosote . . . Removal and Recovery Systems . . . Coal Tar Roofing Materials . . . Waterproofing and Dampproofing Materials . . . Tarmac Road Tar Materials . . . Bituminous-base Paints . . . Coal . . . Coke . . . Fast's Self-aligning Couplings . . . Piston Rings . . . Pressure-treated Lumber.

Send for the Koppers Booklet describing "Chemicals from Coal"

KOPPERS

KOPPERS COMPANY
KOPPERS BUILDING
PITTSBURGH, PA.

DISINFECTANTS
DEODORANTS
INSECTICIDES

•

REFINED NAPHTHALENE

Crushed, Crystals, Powder, Lump, Chips, Flakes. For use in manufacture of deodorizing blocks, moth preventives and other insecticides. Also Naphthalene in Balls, Blocks, Tablets.

COAL TAR DISINFECTANTS
Coefficients 2 to 20, F.D.A. Method

CRESOL AND
CRESYLIC DISINFECTANTS

PINE OIL DISINFECTANTS

PINE OIL DEODORANTS

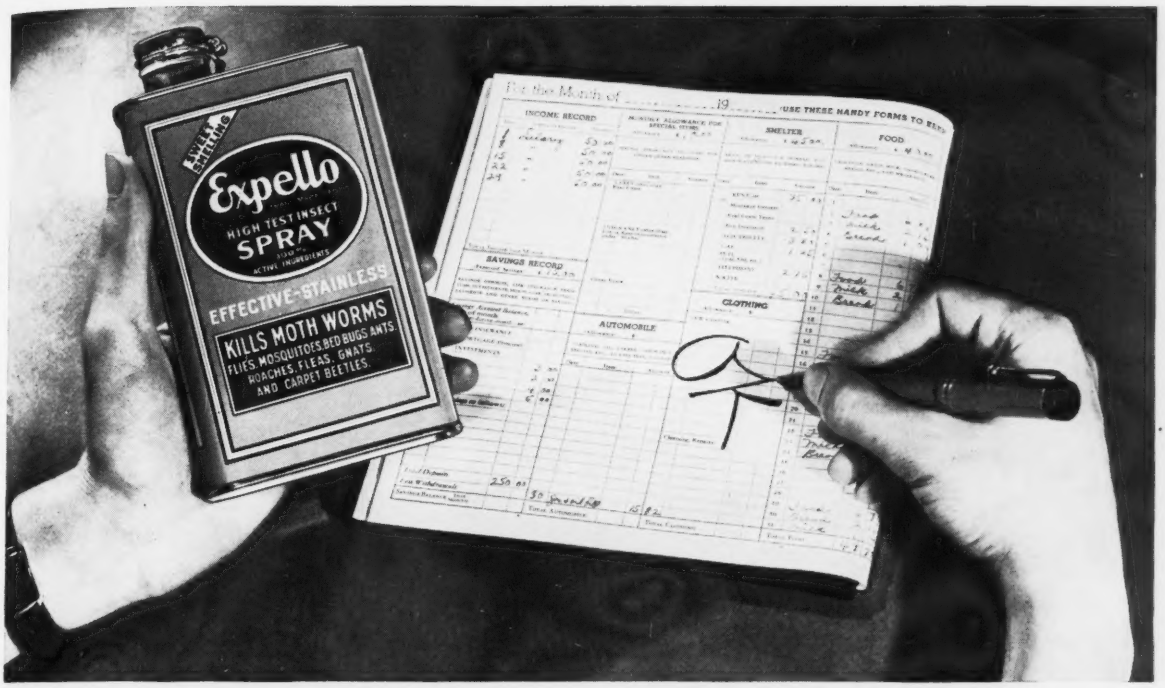
CRYSTAL AND BLOCK DEODORANTS

LIQUID INSECTICIDES

DEODORIZING BLOCKS

Pressed Naphthalene or Paradichlorobenzene. Various sizes and shapes. Perfumed and plain. Bulk industrial packages, retail packages.

THE WHITE TAR COMPANY
OF NEW JERSEY, INC.
KEARNY, N. J.



keep the moths out of the budget

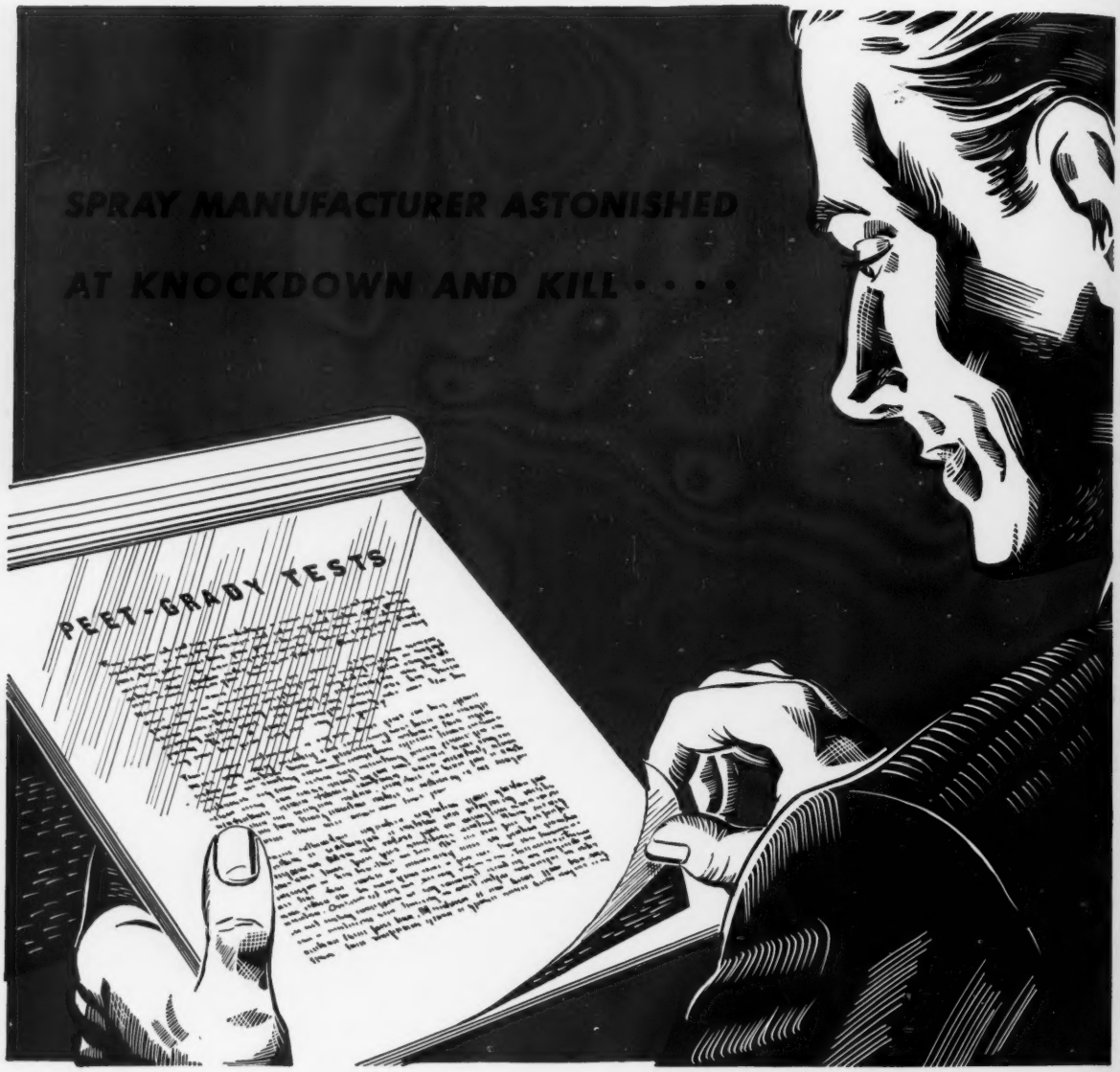
Expello is moth insurance in crystal or liquid form! Safe arrival of that "insurance" at the peak of its efficiency is insured by the Crown Cans in which it is packed.

Crown not only produces the containers in which Expello products are sold . . . but makes separate, scientific dispensers such as the Expellometer . . . and dual purpose containers which serve both as container and dispenser for Expello products.

Crown takes particular pride in the success of The Expello Corporation of Dover, N. H. For Crown and Expello have grown up together! Expello's first cans were designed, planned, constructed by Crown . . . and the Crown organization has aided Expello in the development of sales-making containers for its fast-growing line of products.

CROWN CAN COMPANY, PHILADELPHIA, PA., *Division of Crown Cork and Seal Company,* Baltimore • St. Louis • Houston • Madison • Orlando • Fort Wayne • Nebraska City.

INDEPENDENT AND HELPFUL CROWN CAN



When you see the results of Peet-Grady tests of your own formulations containing DHS Activator*, you'll be astonished, too. Here are seven good reasons why you should include DHS Activator in next year's formulations.

1. Increases knockdown and kill of liquid sprays.**
2. Economical—more knockdown and kill per dollar of cost.
3. Odor—pleasant, non-irritating, brings repeat orders.
4. Stable—promotes retention of toxicity and clear dilution in storage.
5. Increases effectiveness against crawling insects.
6. Non-toxic, as used, to warm-blooded animals.
7. Miscible with all ingredients used in liquid insecticides and sprays.

We have conducted extensive research on various grades of sprays made from many combinations of toxic ingredients. Results are yours for the asking.

*Reg. U. S. Pat. Off.
**Jour. Econ. Ent. Vol. 34 (2)—195-197. Write for reprint.

QQ-90

BRANCH OFFICES: CHICAGO • NEW YORK • ST. LOUIS • SALT LAKE CITY • SAN FRANCISCO

SALES POWER

FOR DEODORANT BLOCKS AND CRYSTALS!

Felton

COLOROMES

ATTRACTIVE PERFUME AND COLOR COMBINED

Coloromes accelerate your business and get you off to a head start on competition. They add the SALES POWER you need to move your products off the counters and into the hands of customers. They give you the SALES APPEAL that encourages customers to specify your products instead of others.

Try them in making up your new line of paradichlorbenzene and naphthalene blocks and crystals. They economically add lasting fragrance and attractive color in one easy step. You'll be delighted to find how simple they are to use, too!

Coloromes are available in a large assortment of popular perfumes and colors, as well as perfumes without color if desired.

Send for Samples and Quotations

BRANCHES IN PRINCIPAL CITIES

Boston, Mass.
80 Boylston St.
Sandusky, Ohio
1209 Buckingham St.
St. Louis, Mo.
4910 W. Pine Blvd.
Los Angeles, Cal.
4727 W. Washington Blvd.
Portland, Ore.
121 N. W. 5th Ave.
Denver, Colo.
1729 Arapahoe St.

FELTON Quality

FELTON CHEMICAL COMPANY, INC.

599 JOHNSON AVE. BROOKLYN, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME AND FLAVOR OILS.

BRANCHES IN PRINCIPAL CITIES

Philadelphia, Pa.
15 Lombard St.
Chicago, Ill.
1200 N. Ashland Ave.
New Orleans, La.
Salter Bldg.
San Francisco, Cal.
707 Kohl Blvd.
Montreal, Que., Canada
380 St. Paul St. W.
Toronto, Ont., Canada
218 Front St. W.

H-D-10

New Hospital Disinfectant

2 Strengths

COEF. 5 AND COEF. 10

Forms clear solutions in water at any dilution. Mild, fragrant odor. Introduce H-D-10 to your hospital, institution and sanitarium buyers. Write for free samples and complete information.

NO-ROMA

The odorless disinfectant

3 Strengths

COEF. 2 COEF. 5 COEF. 10

Make snow-white emulsions in water—with absolutely no trace of odor! Introduce this new germicide to your trade—it's the newest disinfectant in the field—write us for free samples and complete information.

BAIRD & McGUIRE, INC.,

Holbrook, Mass. **St Louis, Mo.**

SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

FROM many directions, the National Association of Insecticide & Disinfectant Manufacturers is being called upon to "do something" about the ever tightening situations in supplies of sodium fluoride, paradichlorbenzene, carbon tetrachloride, cresylic acids, and a dozen other important raw materials for manufacturers of insecticides, disinfectants, and sanitation products.

But it is easier to say "do something," than to do it. Even though many vitally necessary products for the maintenance of sanitation among both the military and civilian populations, and for the preservation of food and other supplies hinge on these raw materials, it is well nigh impossible to "do something." In the present complex priorities situation,—becoming more complex every day,—manufacturers outside of those engaged directly in supplying defense needs are of necessity receiving minor consideration. There is a wide difference in importance in official eyes between steel for battleships and roach powder for civilian needs.

Manufacturers can be assured that the National Association is doing everything it can in the present priorities situation, but, bluntly, there is not too much that it can do. Only a realization in Washington of the tremendous potential depredations of uncontrolled insect, fungus and germ life can establish officially the vital importance of insecticides, disinfectants, and allied materials. But a plea for these products in the turmoil of Washington today is something like a sparrow trying to make his chirp heard in a boiler factory.

ABOUT six months ago, a contract for the purchase of a large quantity of liquid insecticide was awarded by New York State for the use of various state institutions. At the time the contract was let, the specification and the award came in for serious criticism from many leading entomologists, manufacturers, and the National Association of Insecticide & Disinfectant Manufacturers. Expert opinion was unanimous then that the specification could not be met. Today, after hearing the results of an investigation and tests on the product supplied to the state, we conclude that the specification was *not* met and that the state paid an excessive price for the product which it bought.

Now, these facts were pointed out to officials of the New York State Division of Standards and Purchase. But, as far as we can determine, they have done nothing. They acknowledged reports on the shortcomings of the insecticide supplied, but if they have investigated further, they have kept it quiet as far as the insecticide industry is concerned. They have not asked for proof or further facts resulting from the investigation of the product. Of course, it is only a mere ten thousand dollars worth of bug juice, and it's public money, so why get so goshdarned excited?

The Disinfecting Value of

PINE OIL EMULSIONS

By Dr. GEORGE F. REDDISH

Lambert Pharmacal Co.

FOR many years there has been considerable discussion as to the disinfecting value of pine oil emulsions. It is generally agreed by most authorities that for disinfecting purposes pine oil emulsions have proved to be quite satisfactory. For some reason however, this class of disinfectants has not been as widely used as certain others. It may be of interest to discuss this whole matter and bring out the facts with respect to this situation.

It is necessary first to define the word "disinfectant," and then see to what extent pine oil emulsions fit this definition. According to Patterson,[1] a disinfectant is "An agent that frees from infection; usually, a chemical agent which destroys disease germs or other harmful microorganisms (but not, ordinarily, bacterial spores); commonly used of substances applied to inanimate objects." This is a carefully worded definition, since it was made by a famous lexicographer after studying the history of the term from 1854 to 1930. A shorter and more commonly accepted definition of the term, however, is "any substance used to kill communicable disease germs on inanimate objects." It is understood that the kind of disease germs intended to be killed by disinfectants are those which cause communicable diseases. Disinfectants then, are chemical substances used to kill communicable disease germs on inanimate objects.

It should be noted that suppurative infections are not classified as communicable diseases. The reason is that such infections are not contracted from other diseased individuals, but are caused by bacteria already present on the skin and mucous membranes of the person or animal so infected. According to the accepted definition of the term, disinfectants are not expected to kill these suppurative organisms on the skin and mucous membranes of man and animals. Antiseptics are used for this purpose.

This being the case it is evident that disinfectants and antiseptics have different fields of usefulness. Disinfectants are expected to kill such disease germs as the typhoid bacillus, the diphtheria bacillus, the pneumococcus, the scarlet fever streptococcus, the microorganisms causing chlorea, paratyphoid fever, dysentery, and other communicable diseases. Antiseptics, on the other hand, are used on the human and animal body and are expected to kill those bacteria which cause infections of the skin and mucous membranes, such as boils, abscesses, infections of the mucous membranes of the oral cavity, etc. Disinfectants are used to kill communicable disease organisms on inanimate objects and antiseptics are used to kill the infectious bacteria on the skin and mucous membranes of man and animals. This distinction is quite clear and is generally understood by the professions and laymen as well.

It is necessary to recognize this distinction when evaluating the disinfecting value of pine oil emulsions. The question here is—how effective are pine oil emulsions as disinfectants? The answer is simple and well supported by scientific tests—they are excellent disinfectants since they are effective in killing all communicable disease germs when used in proper dilution. In fact they kill these disease germs in much greater dilution than is usually employed for general disinfection.

Extensive tests have been made of the germicidal activity of a standard pine oil emulsion against the following disease-producing microorganisms, using the official U. S. Food and Drug Administration technique:[2]

Name of Organism	*Dilution necessary to kill in 5 min.*
P. pestis	1-500
V. cholerae	1-500
E. typhi	1-300
S. paratyphi	1-250
S. schottmuelleri	1-250
S. dysenteriae	1-200
S. enteritidis	1-200
P. vulgaris	1-200
Streptococcus hemolyticus	1-200
Streptococcus scarlatina	1-300
C. diphtheriae	1-100
Pneumococcus Type II	1-100

It is to be noted that all of the disease germs used in these tests were killed in dilutions ranging from 1-100 to 1-500. Most of them, in fact, were killed in dilutions from 1-200 to 1-500 within the 5-minute test period. It is evident that this disinfectant is effectively germicidal in high dilution against microorganisms causing communicable diseases.

The pine oil emulsion used in these tests was made according to the formula of Hygienic Laboratory Pine Oil Disinfectant. The *E. typhi* phenol coefficient of this formula is

an average of 4.0. When this pine oil emulsion is diluted to 20 times the phenol coefficient as is required, the resulting dilution (1-80) will quickly kill all of the communicable disease germs with a considerable margin of safety. This is an ample margin of safety since all of these disease germs are readily killed in a greater dilution than 1-80. There are also additional factors of safety which give further assurance that dilutions of pine oil emulsions 20 times the phenol coefficient will be effective in killing these disease germs on inanimate objects.[3]

STEVENSON[4] recommended that Hygienic Laboratory Pine Oil Disinfectant be used for general disinfecting in a dilution up to 1-500. He further stated that it could be safely used for disinfecting purposes in place of other disinfectants. Later McCoy, Stimson, and Hasseltine[5] found that this disinfectant was not germicidal against *Staphylococcus aureus* which was later substantiated by others. This fact, while interesting, does not detract at all from the actual value of pine oil emulsions as disinfectants. *Staphylococcus aureus* is not a communicable disease organism, and no useful purpose would be served if this germ were destroyed on inanimate objects. In fact, if a room were completely sterilized and all disease-producing bacteria killed, the danger from suppurative infections would not be eliminated. The reason for this is that the organisms causing such infections are always present normally on the skin and mucous membranes and are the actual source of these infections. Boils, abscesses, oral infections, etc., are not contracted from the floors and walls of rooms, but from bacteria present on the skin and mucous membranes of each individual.

The question then is, should disinfectants be expected to kill *Staphylococcus aureus* and the other suppurative organisms? The answer is that if they are used only for disinfecting purposes they need not kill any of these bacteria. In fact, the killing of these pus-producing microorganisms on inanimate objects does not protect the public from a communicable disease. Also the killing of such pyogenic organisms on inanimate objects does not protect the individual from suppurative infections.

The plain fact is that the killing of *Staphylococcus aureus*, *Staphylococcus albus*, and *Ps. pyocyanea* on inanimate objects does not serve a useful purpose. The reason is, as just stated, infection from these organisms comes from the skin and mucous membranes of the individual and not from floors, walls, water, milk, or other sources.

The manufacturers of pine oil emulsions, therefore, should not make claims for their products that suppurative organisms are destroyed. Neither should they make antiseptic claims since pine oil emulsions are not suitable for this purpose because they do not kill *Staphylococcus aureus*. For the same reason pine oil emulsions should not be recommended for surgical instruments. These products should be recommended only as disinfectants and they are amply effective for this purpose.

There is no reason why pine oil emulsions should not be used for general disinfecting purposes. In fact, there are good reasons why they should be so used. In the first place in dilutions 20 times the phenol coefficient these products will kill all disease-producing bacteria of epidemiologic importance, and with an ample margin of safety. In addition to killing all the kinds of germs which cause communicable diseases, these products have the further advantage of being non-caustic, nonpoisonous, non-irritating, and also pleasant to use. There is every reason why pine oil emulsions should be used for disinfecting purposes and no reason why they should not be so used. As indicated above, so long as these products are not recommended for antiseptic purposes for use on the body and for surgical instruments, they can and should be recommended and used for general disinfecting.

PINE oil disinfectants are generally combinations of steam distilled pine oil and soap. Pine oil is not water soluble and it is, therefore, necessary to combine it with some saponifying material in order that the finished product shall be water soluble. Pine oil disinfectants form milky white emulsions when diluted with water and it is this diluted emulsion that is used for disinfection purposes.

There are several grades of steam distilled pine oil. Some grades will give higher phenol coefficients than others when made into disinfectants. The color varies from water white to pale amber or yellow. Dis-

Specifications on Two Grades of Commercial Pine Oil

No. 1

	Max.	*Min.*	*Typical Analysis*
Specific Gravity at 15.5°C.	0.942	0.937	0.940
Refractive Index at 20°C.	.....	1.480	1.483
Unpolymerized Residue ($38N\text{-}H_2SO_4$)	2.5%	.....	0.4%
A.S.T.M. Distillation:			
5%	.....	195°C.	210°C.
95%	225°C.	.....	220
Moisture	1.0%	.....	0.25%

PROPERTIES

Color:	"Water White"
Flash Point:	Approximately 183°F.
Optical Rotation:	Approximately +10 to +11
Tertiary Alcohols:	Approximately 64 to 68%
Secondary Alcohols:	Approximately 17 to 19%
Hydrocarbons:	Less than 3%
Phenol Coefficient:	Approximately 7. (F.D.A. Method)

No. 2

Specific Gravity	0.9447
R. I. 20°C.	1.4834
Sp. Rot.	(approx.) +15.6°
Color	Almost Water White
% Tertiary Alcohol	(approx.) 80%
% Secondary Alcohol	(approx.) 12%

infectant manufacturers seem to prefer the water white and very pale grades of pine oil and these lighter grades usually give the higher coefficient values.

The germicidal potency of a pine oil disinfectant comes solely from the steam distilled pine oil content and it is, therefore, very important that the proper grade be used in order that the finished product shall have the highest possible bacteria-killing efficiency. Once having obtained the proper grade of pine oil, it is then necessary that the proper type and amount of emulsifying agent be used. It might be said that the germicidal efficiency of the finished product depends primarily on the proper adjustment of the pine oil and soap (emulsifying material).

The specifications on two grades of pine oil commercially available are shown on the previous page.

It is to be noted that the tertiary alcohol contents vary considerably in these two types of pine oil. Research done in some quarters seems to indicate that the higher the tertiary alcohol content, the higher the phenol coefficient of the finished disinfectant, all other conditions being equal.

THERE are three very important factors upon which the phenol coefficient of a pine oil disinfectant depends, namely:

1—The amount of bacteria killing compounds a given pine oil contains, (tertiary alcohols).

2—The emulsifiable properties of the pine oil and—

3—The emulsifying properties of the base.

First, research has shown that terpineol and borneol contained in steam distilled pine oil contribute a great deal towards the germicidal efficiency of the finished disinfectant. Briefly, we can state it in this manner: The larger the tertiary alcohol content, the higher the phenol coefficient of the finished disinfectant. This, of course, is based on all other factors being equal.

Second, the emulsifiable properties of the steam distilled pine oil are important for two reasons. First, the finished pine oil disinfectant is generally used in a diluted form (emulsion). Second, the phenol coefficient of the pine oil disinfectant is determined in a dilute aqueous solution, 1 per cent or less, and in order that the pine oil may be uniformly distributed throughout the water, it must have good emulsifiable properties, that is, properties necessary for maximum and permanent dispersion.

Third, the emulsifying or saponifying properties of the emulsifying agent or base are of extreme importance. In the writer's opinion, formed from many years of work with pine oil disinfectants, the soap or saponifying agent used in making a pine oil disinfectant can completely alter or change the germicidal value of the disinfectant. The dispersion properties of the base are of extreme importance because the phenol coefficient of the disinfectant is dependent to a great extent upon the finished disinfectant forming almost perfect emulsions when diluted in water.

Pine oil disinfectants containing too small a percentage of soap base or saponifying material will usually have a relatively low phenol coefficient value. In many cases the addition of more emulsifying agent will increase the phenol coefficient as much as over 100 per cent. Pine oil disinfectants have been examined which had to begin with a phenol coefficient of 2.2. As little as 3 per cent saponifying material was then added and the disinfectant checked for germicidal value and the phenol coefficient had increased to a figure well over 5.

A good pine oil disinfectant, one which will exert the utmost germicidal activity, must be a carefully balanced blend of the proper grade of pine oil with the proper grade and amount of saponifying or emulsifying material. Such disinfectants are produced which have phenol coefficients ranging from 3 up to 7. The newly developed high coefficient pine oil disinfectants are especially effective and suitable for the disinfection of premises and inanimate objects. The fact that these pine oil disinfectants do not kill *Staphylococcus aureus* and other pus-forming organisms does not detract from their efficiency as disinfectants. In disinfecting we are not concerned with destroying the pyogenic organisms, which are always present on the human and animal skin, but are only interested in destroying the pathogenic microorganisms causing communicable disease.

Summary

Pine oil emulsions in proper dilutions will kill all kinds of bacteria causing communicable diseases. When applied to inanimate objects in a dilution 20 times the phenol coefficient, these products are sufficiently germicidal for general disinfecting purposes.

Pine oil emulsions should not be used as antiseptics on the skin and mucous membranes since they are not effective against the suppurative organisms. For the same reason they should not be used for surgical instruments.

Pine oil emulsions when used as disinfectants are sufficiently germicidal for the purposes intended and in addition are non-caustic and non-irritating.

References

[1]Patterson, A. M. Meaning of "Antiseptic," "Disinfectant," and Related Words. *Amer. Jour. Public Health, 22,* 465-472 (1932).

[2]Reddish, G. F. Unpublished Reports.

[3]Reddish, G. F. The Significance of the Phenol Coefficient. *Soap, 11,* 95 (1935).

[4]Stevenson, A. F. An Efficient Liquid Disinfectant. *U. S. Public Health Service, Public Health Reports, 30,* 3004-8 (1915).

[5]McCoy, G. W., Stimson, A. M., and Hasseltine, H. E. Disinfectants: Their Use and Application in the Prevention of Communicable Diseases. *U. S. Public Health Service, Public Health Reports, 42,* 20, 41, (1917).

—— ♦ ——

A cream-like emulsion is obtained by mixing triethanolamine soap, oleic acid, a small amount of stearic acid, petroleum, camphor oil and benzaldehyde. To this is added tripoli previously treated with petroleum. S. Matuno. Japanese Patent No. 133,671.

Kenya Pyrethrum . . .

How and why kenya flowers have completely displaced Japanese pyrethrum in the American market

UNTIL two years ago, Japan supplied practically all the pyrethrum flowers used in the United States. This amounted in most years to something like fifteen million pounds with a value anywhere from one to three million dollars. But during the past year, no Japanese pyrethrum of any consequence has come to the American market. In place of Japan, British Kenya Colony in southeast Africa has taken over supplying American needs of this essential insecticide material. The reasons behind this switch in source have little to do with either the war in Europe or in China. Kenya has merely offered and shipped a better pyrethrum at a better price.

It would seem that every twenty years or so, the chief source of pyrethrum for American insecticide manufacturers is changed. Years back, pyrethrum was supposed to originate in Persia and the Black Sea areas. For some years prior to the first World War, actually from about 1890 to 1915, Dalmatia, then a part of southern Austria, grew and supplied the world with pyrethrum, shipping mostly from Trieste. During the war, Japan began the growing of pyrethrum from Dalmatian seed and by 1920 was supplying most world requirements, holding this position for just about twenty years. Back in 1935, Kenya shipped its first pyrethrum to the United States. In 1938-39, Kenya came into the picture in a larger way as a supplier and by the beginning of 1941 had won the American market.

Not too much is known about the inside details of pyrethrum growing and shipping in Kenya. It is known, however, that the industry, with its rapid development of the past five years, is a monument to agricultural science, for without a doubt, scientific methods of planting, growing, drying and packing have enabled Kenya to give to the world the finest pyrethrum which it has ever known. Japanese pyrethrum growers and packers with their crude methods and low-grade resulting product have simply not been able to stand up under the competition.

The Kenya pyrethrum industry is owned and operated by a group of Britishers who are banded together in the Kenya Farmers' Association, which Association has been encouraged and sponsored by the British Government. Through the cooperative efforts of this group, pyrethrum of higher pyrethrins content has been grown and successfully marketed in various parts of the world, principally in the United States.

The detailed facts behind the ascent of Kenya pyrethrum over the Japanese are several. For one thing the increased demands of the Japanese themselves for pyrethrum flowers for use by their armies in the field have cut sharply into the quantities available for export. With less of a pyrethrum surplus on hand, they have been somewhat more independent of the export market, and this situation has played right into the hands of the new suppliers in Kenya.

Primarily, though, the replacement of Japanese flowers by the Kenya product has been a matter, not of quantity, but quality. The Kenya marketing group sells and ships its flowers on a guaranteed pyrethrins content of 1.3 per cent. And this pyrethrins content is not determined by laboratories in Kenya under the thumb of the Association. The assays are made in the United States after the flowers arrive, and it is on this basis that they are paid for. Furthermore, the moisture content of Kenya flowers runs from 5 to 7 per cent as compared to Japanese flowers running close to 15 per cent.

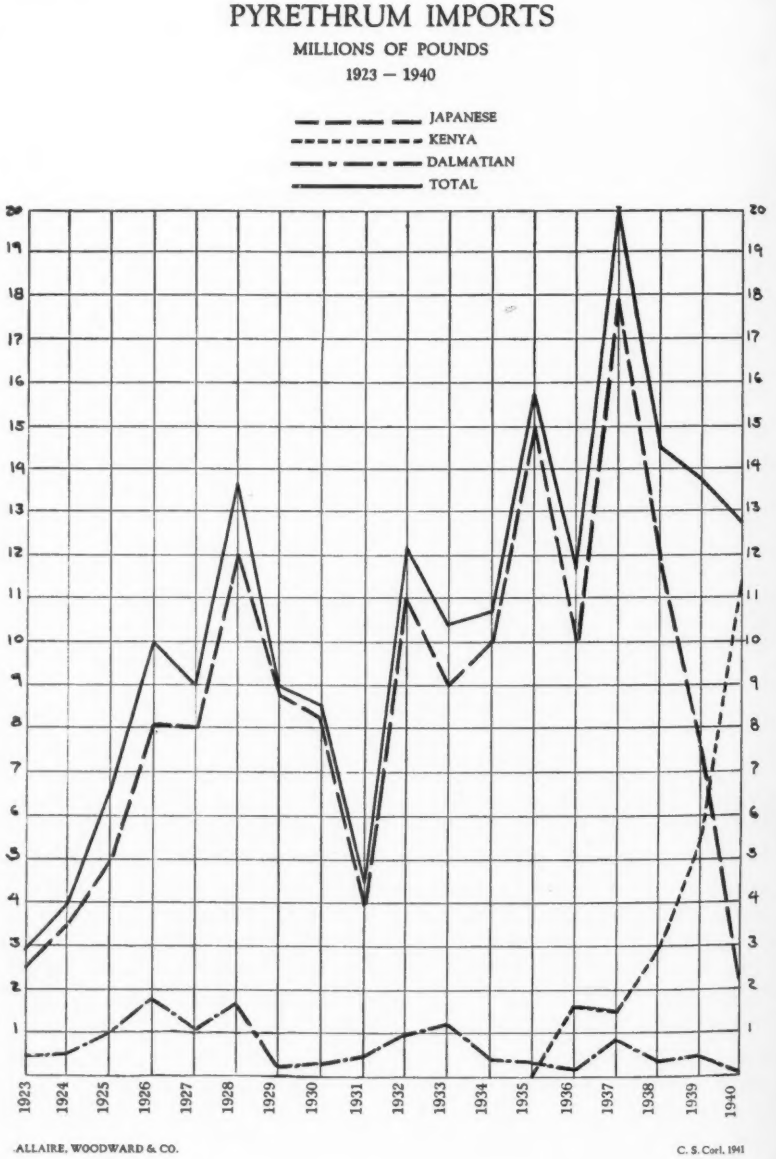
By contrast, Japanese flowers were sold on a basis of 0.9 per cent pyrethrins and this figure was determined by laboratories in Japan before shipment. On this basis, payment had to be made. In most instances, assays in the United States after arrival of the flowers, showed pyrethrins to be lower than the Japanese figures, sometimes as much as 0.2 per cent. This caused numerous disputes and much dissatisfaction among American importers, who after having assays checked by outside laboratories had no option but to accept the higher Japanese figures. In fact, it came to be generally accepted that no Japanese pyrethrum upon arrival would test up to the figure reported by the Japanese laboratories. But contracts for shipment and payment had to be made in advance on the basis of Japanese figures and there was nothing else which American importers could do but meet the conditions.

Behind the winning of the American market by Kenya flowers lies a long period of research in plant selection, scientific soil preparation and growing, proper methods of harvesting, drying and baling. Whereas pyrethrum planting in Japan is a hit-or-miss affair, the individual enterprises of thousands of small farmers, in Kenya it is a scientifically controlled close-knit industry. In Japan, flowers are picked and merely spread out like hay to dry in the sun. If there is rain, especially prolonged wet periods, it means possible fermentation, discoloration, loss of pyrethrins, and other damage, and high moisture content of the flowers as received by the insecticide manufacturer. In Kenya, the flowers are kiln dried away from the elements under strictly controlled conditions. Thus the flowers retain the maximum pyrethrins content and arrive containing only five to seven per cent moisture.

From 1938 to 1940, there was a great deal of trouble in the United States with the color of Japanese pyrethrum. Owing to the Chinese War, Japanese farmers were not giving the attention to pyrethrum growing which they had given before. There also had been several rather bad rainy periods which affected drying of the crop in certain large areas. Fermentation and oxidation resulted in badly darkened flowers and gave trouble in producing pyrethrum extracts of a light color. By contrast, Kenya flowers of the same period were bright in color and gave extracts of clear light color. The same is true of Kenya flowers being shipped today. Because of the controlled conditions under which they are dried, discoloration is rare.

Investigation among pyrethrum importers indicates that there has been a minimum of disputes regarding pyrethrin content and basis of payment in the case of Kenya flowers. The Kenya industry appears to have won the confidence of American importers rather completely and this likewise has undoubtedly been a factor in encouraging the preference for Kenya material. But the outstanding factor in the rise of Kenya flowers in the American market has been the supplying of a finer material at a better price, strictly a competitive factor. In short, by its price policy, that is keeping the price of flowers down and lowering them in line with increased production, avoiding price juggling and speculation, Kenya has shown what American manufacturers interpret as smart marketing judgment. Fair open dealing and more pyrethrins per dollar of pyrethrum cost summarize the winning of the American market.

Although the shippers of Kenya are not too communicative about their new and now thriving industry, word is about in American markets that they plan to establish a price plan in the future which will stabilize the pyrethrum market. Whereas pyrethrum has been a speculative football for years with widely fluctuating prices during the months of heaviest buying by American importers, rumor has it that Kenya intends to establish a price which will remain in effect for a definite period of three, four, or six months and which will be based on production tonnage and costs. This will enable growers as well as American proc-



essors and manufacturers of finished insecticides to stabilize their prices and costs. It is also reported that Kenya shippers intend to encourage a wider pyrethrum use in all parts of the world by keeping prices down, and that rigged markets which sent prices in Japan to sky-high levels in years gone by, are a thing of the past.

And now just a word regarding the reasons why pyrethrum and extract prices today are lower than they have been for many a month, and were only recently reduced again,—shipments of Kenya flowers to the United States have been heavy, and they have been at prices aimed to encourage wider use of the material. The prices, it is reported, are in keeping with production costs in Kenya and permit of a fair profit to the growers. If the rise in American synthetic insecticide materials over the past few years is a factor in these recent price reductions, there is nothing to indicate this in such information as is available. In contrast to higher prices over the last half of 1941 for practically every known commodity, the insecticide manufacturer is going to pay considerably less for his pyrethrum than he paid last year.

The accompanying chart which shows American imports of pyrethrum flowers for the past seventeen years and very graphically indicates the spectacular rise of Kenya flowers in the American market was prepared by Cady S. Corl of Allaire, Woodward & Co., Peoria, Ill. and was shown in connection with a report which he rendered at the 1941 mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers in Chicago in June. It is hoped that a rather complete report on the Kenya pyrethrum industry and its methods of operation will be available for publication with illustrations during the next three or four months.

—— ♦ ——

A solution of 30 grams of naphthalene in sufficient orthodichlorobenzene to make 100 cc. is volatilized by spraying it onto a surface heated to 375°. A dosage of 370 cc. per 1000 cubic feet killed 100 per cent of houseflies in 24 hours, but cockroaches required three days for more than 95 per cent kills, and 10 days for more than 99 per cent kills.

Application of these compounds by the method described has a number of advantages: relative non-toxicity to man, relative non-inflammability, considerable penetrating power, marked irritating action for insects, driving them from cracks and crevices, low cost. The chief disadvantages are: unpleasant odor, probable injury to plants, limitation of use to fairly tightly enclosed spaces. Possible damage to foods and goods has not been investigated. The method offers promise for control of certain household and other insects. S. N. Sullivan, E. R. McGovran and L. D. Goodhue. *J. Econ. Entomol.* **34**, 79-80 (1941).

Toxicity of Rotenone

By Dr. R. C. Roark*

Bureau of Entomology & P. Q., U. S. Dept. Agriculture

SINCE 1927 the writer has been compiling information on derris, lonchocarpus, tephrosia, and other plants containing rotenone and the rotenoids. The data on the effectiveness of these insecticidal principles on various species of arthropods have been classified according to the order, family, and genus to which these organisms belong. This information, which will be published in a series of mimeographed publications of the Bureau of Entomology and Plant Quarantine, should prove of interest and value to all who are concerned with the control of injurious insects by chemical means.

The extent to which rotenone and the rotenoids have been tried is shown in the accompanying table.

There seems to be no record in the literature of tests with these materials against Thysanura, although pest-control operators have doubtless used preparations containing them for control of silverfish.

Rotenone and the rotenoids are highly toxic to all species of Mallophaga, Anoplura, and Siphonaptera upon which they have been tested. Practically all Hymenoptera except a few ants are also susceptible. The other orders display a wide range in susceptibility from family to family and even among genera of the same family. In the same lepidopterous family, Phalaenidae, why should the maize stalk borer, *Busseola fusca* (Fuller), be so susceptible and the southern armyworm, *Prodenia eridania* (Cram.), be so resistant to rotenone? This question and many similar ones are for the insect toxicologist to answer.

The publication of over 2,300 abstracts from the literature on the insecticidal uses of rotenone and the rotenoids arranged according to insect classification should aid experimenters in extending the range of usefulness of these compounds.

Number of identified families, genera, and species of the various orders of arthropods against which rotenone and the rotenoids have been tried.

Order	Families	Genera	Species	References
Collembola	3	4	4	8
Orthoptera	5	13	13	49
Dermaptera	1	1	1	3
Odonata	1	1	0	2
Isoptera	0	0	0	3
Corrodentia	1	2	2	1
Mallophaga	4	8	11	33
Thysanoptera	1	12	25	100
Homoptera	10	55	92	341
Hemiptera	8	42	56	106
Anoplura	3	7	10	35
Coleoptera	29	125	189	439
Lepidoptera	42	165	214	553
Hymenoptera	6	29	37	131
Diptera	19	49	79	349
Siphonaptera	4	8	10	47
Acarina	12	27	40	179
Phalangida	1	1	1	1
Total	150	549	784	2,380

* Before 27th mid-year meeting, National Association of Insecticide & Disinfectant Manufacturers, Chicago, June 9 and 10, 1941.

Testing IMPREGNATED FABRICS *for* ANTIBACTERIAL PROPERTIES

*Doris J. Hirschmann and Helen M. Robinson**

Bureau of Home Economics, U. S. Dept. of Agriculture

NATIONAL defense agencies and the textile industry are manifesting a growing interest in chemically treated fabrics with so-called "antiseptic" properties. The interest in these materials arises from two objectives: namely, to prevent the deterioration of the fabrics caused by microbial growth and to aid in the control of disease.

This report from the Bureau of Home Economics compares two procedures for testing the so-called antiseptic activities of fabrics. During the investigation, these tests were applied to determine the antibacterial properties of certain impregnated fabrics, that had been found by Furry, Robinson, and Humfeld[1] to possess varying resistance to mildew growth. One of these procedures, the agar-plate method, described by Ruehle and Brewer[2], has been in general use for some time for determining the antiseptic properties of such materials as tape, pads, plasters, dressings, etc. The other, designated as the broth procedure, was recently developed by the Bureau of Home Economics when this Bureau was requested by certain defense agencies to test treated fabrics for antiseptic properties.

There is very little published material concerning methods for testing antiseptic fabrics. Greenbaum and Harrison[3] used the agar-plate method with subsequent transfer to broth to test the bacteriostatic and bactericidal properties of "antisepticized hose." Recently, James and Lundell[4] presented two methods for testing a commercially processed fabric. The first, which tested "self-antiseptic" properties was a modification of the agar-plate method. The second was a test for "self-sterilizing" effects developed in material. It determines the number of bacteria in the processed fabric at various time intervals after inoculation by plating in nutrient agar. Epstein[5] commented on methods for and interpretations of germicidal tests on "self-sterilizing" fabrics and other materials. These methods should not be confused with the method described by Rogers, Wheeler, and Humfeld[6] for testing mildew resistance of fabric. In the latter, an incomplete media is supplied and the organism required to utilize the fabric for at least a partial source of nutrient.

At the present time the development of antibacterial fabrics is rapid, but the evaluation of these fabrics, from the hygienic standpoint, presents many problems.

The use of chemically impregnated cloth involves the important question of toxicity. This is especially true of materials that come in contact with the body such as wearing apparel. Extensive experimentation may be necessary before such fabrics can be properly recommended for certain uses.

The antibacterial efficiency of any impregnated fabric depends upon a number of factors, such as the amount of moisture present, the types of organisms involved, and the protection afforded the organisms by organic matter. Also involved in the antiseptic value of impregnated cloth are the properties of the chemical agent, such as solubility. The removal or change of the chemical by laundering, the action of body fluids, or other means should be considered.

These practical considerations make the value of these impregnated fabrics difficult to interpret by laboratory tests alone. On the other hand, some method for estimating and comparing the antibacterial properties of these fabrics is necessary. In the following paper, a procedure is described which can be readily standardized to compare such properties, and which can be used to test a wide variety of chemically treated fabrics.

Experimental Procedure

Materials

THE fabric used was an 8-ounce unbleached cotton duck, which was degreased, desized, and chemically treated by methods described by Furry, Robinson, and Humfeld.[1] The following 12 treatments were chosen for the most part because of their previous success in preventing the growth on fabrics of *Chaetomium globosum*, an aerobic, cellulose-decomposing fungus: Chlorthymol, thymol with phenyl salicylate, a con-

*Present address, Fish and Wild Life Service, U. S. Department of Interior. Appreciation is expressed to C. M. Brewer, senior bacteriologist, of the U. S. Agricultural Marketing Service for his helpful suggestions.

densation compound of chlorthymol with morpholine, an alkylated dimethyl benzyl ammonium phosphate, cadmium chloride with sodium oleate, cadmium chloride with morpholine, copper sulfate with sodium oleate, copper sulfate with morpholine, cutch in cupric ammonium solution, acetone-formaldehyde resin, dichloramine T, and an acetylation mixture with acetic acid and acetic anhydride. All the fabrics impregnated with these treatments showed good resistance to mildew growth, with the exception of the cloths treated with acetone formaldehyde resin, which gave only partial resistance, and dichloramine T, a commercial antiseptic, which did not protect the fabric against the test fungus.

Distilled water was used to rinse the fabrics twice between the treatment and the later tests.

The broth medium was composed of 3 grams of Bacto beef extract, 5 grams of Bacto-peptone, and 1,000 ml. of distilled water. The pH of the broth was adjusted to 7.0 by normal NaOH and compared with a bromthymol blue standard. The medium was then dispensed in 15 ml. quantities and sterilized at 15 pounds pressure for 30 minutes.

The agar medium was composed of the same ingredients as the broth medium except that 15 grams of Bacto-agar were added per liter, and the pH of the medium adjusted to 7.0 as described above. The agar was dispensed in 20 ml. quantities and sterilized at 15 pounds pressure for 30 minutes.

The test organism, *Escherichia coli*, was originally obtained from the Food Research Division of the Bureau of Agricultural Chemistry and Engineering of the Department of Agriculture. Three consecutive transfers in broth were made at 24-hour intervals before using in the tests. The resistance to phenol was not determined.

Bacteriological Tests

The treated fabrics were evaluated for antibacterial properties under specified test conditions against one specific test organism.

For both the agar and the broth tests, the fabric was cut into one-half inch squares and handled under clean, but not aseptic, conditions. As it was desired to test the antiseptic effectiveness of the chemically treated fabrics without steam sterilization and the effectiveness of the same fabrics after steam sterilization, the squares were divided into two groups. Half of the pieces were placed in sterile Petri dishes and allowed to remain at room temperature for 48 hours before testing. The remaining fabric squares were placed in clean Petri dishes, steam sterilized in the autoclave at 15 pounds pressure for 20 minutes and dried in the Petri dishes at room temperature before testing. Three replicate squares of each fabric were used in each test.

The Agar-Plate Test.—The agar-plate test used was a modification of that described by Ruehle and Brewer.[2] Agar was melted and cooled to approximately 42° C. to 45° C., and 0.1 ml. of a 24-hour broth culture of *Escherichia coli* was added to each 20 ml. of medium. The inoculated agar was poured into sterile Petri dishes, 20 ml. per plate, rotated carefully to insure thorough mixing, and allowed to harden. Immediately after hardening, one one-half inch square of the test fabric was placed, with flamed forceps, on the center surface of each agar plate. The fabric piece was firmly, but carefully, pressed against the agar. Untreated fabric squares, tested likewise, served as controls. The plates were incubated for 48 hours at 37° C., and observed after 24 and 48 hours for evidence of inhibition of the organism, and for diffusion of the chemical used in impregnating the fabric.

A clear area surrounding the fabric square, that is one in which no visible colonies of *E. coli* could be detected by the unaided eye, was interpreted as indicating total inhibition of growth of the organism by the chemically treated fabric. These areas were measured in millimeters and arbitrarily designated, according to size, as "slight," "moderate," and "good" inhibition. A partially clear area, or one which contained fewer colonies than did the control plates, was interpreted as partial inhibition. Diffusion of the chemical, when indicated by total or partial inhibition, by increased growth, or by "clouding" of the media, was also noted.

The Broth Test.—Squares of the test fabric were inoculated by placing one loopful of a 24-hour broth culture of *E. coli* on each fabric piece. When the cloth did not absorb the suspension, it was carefully spread over the surface of the square with a nicrome loop. Following inoculation, the fabric pieces remained in the sterile Petri plates for 24 hours at room temperature.

Each inoculated fabric square was then "washed" by placing the square in a series of three broth tubes, each tube containing 15 ml. of nutrient broth. One square was left in the first tube 1 minute, and the tube shaken carefully. The square was then removed by a sterile nicrome hook to the second broth tube, shaken well, and allowed to remain 10 seconds. The square was next transferred to the third tube, shaken well, and allowed to remain in the broth for incubation. A second square of the same fabric was treated in identical manner, except that it was left in the first broth tube for 2 minutes. The third square of the same fabric was treated likewise, except that it was left in the first broth tube for 3 minutes. Care was exercised to avoid contamination in transferring the fabric pieces from one tube to another, and the tops of the tubes were carefully flamed and cooled before the addition of the fabric. All tubes were incubated for 1 week at 37° C., and observations for growth were made daily.

It was asumed that the first broth tube removed the greatest number of bacteria from the fabric, and if the chemical used for impregnation dissolved readily, this tube would also contain the largest amount of dissolved chemical, that the second tube would contain fewer bacteria, less chemical, and so forth. If the substance dissolved slowly, the third tube would contain the most chemical. In either case, the second tube,

LETHANE SPRAYS

stay the way they are made

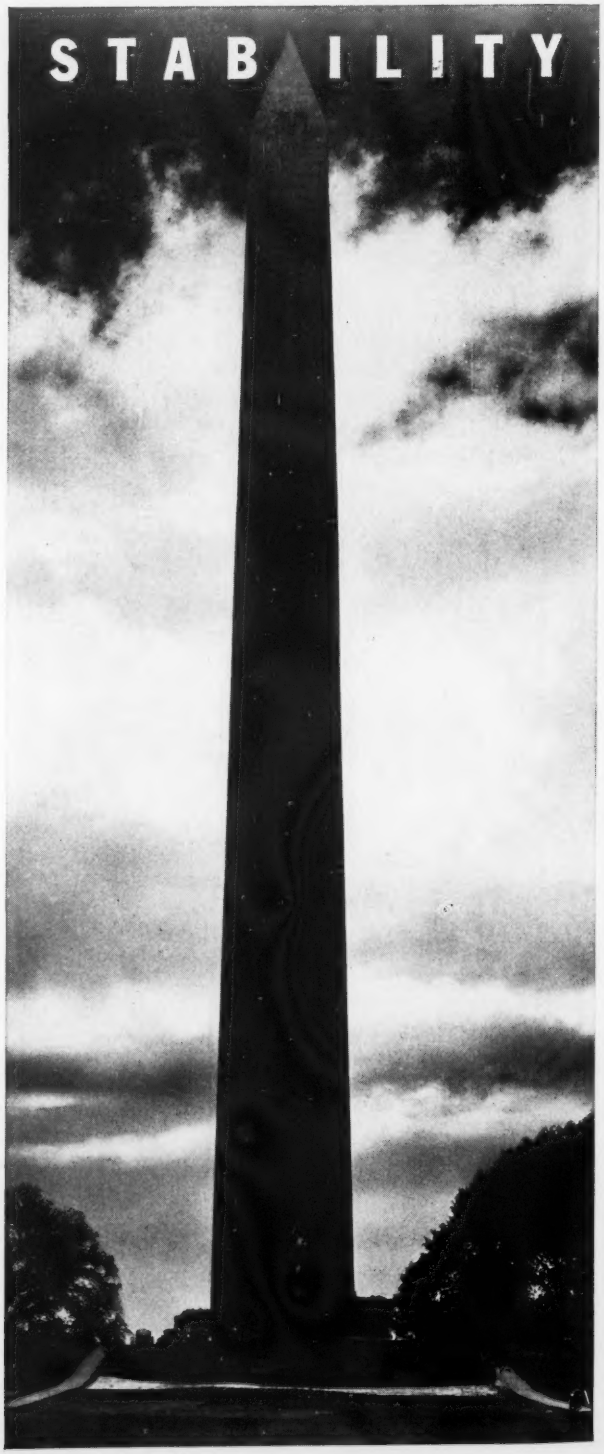
You may depend on LETHANE 384 Special and LETHANE 384 to give your household or cattle spray a *lasting* effectiveness because sprays based on these toxicants remain stable when packed in glass, tin or terne plate.

A LETHANE spray will do a creditable job to the last drop no matter how long it has been held on a dealer's shelf or exposed in a partly filled container.

You need not be concerned how your product holds its killing power; if it is a LETHANE spray, it is stable.

Lethane 384

Lethane 384 Special



RÖHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

BRANCH OFFICES: CHICAGO • KANSAS CITY, MO. • OAKLAND & SOUTH GATE, CAL. • P. N. SODEN & CO., LTD., MONTREAL, CANADIAN AGENT

in which the fabric had been shaken for 10 seconds only, would probably contain very little chemical. In the first series of broth tubes, the samples were in contact with the broth for 1, 2, and 3 minutes respectively. This time was chosen arbitrarily, and used to obtain information on the rapidity with which the chemical might be removed from the fabric.

All negative tubes, that is, tubes showing no growth, after 1 week's incubation were reinoculated with 1 loopful of a 24-hour culture of *E. coli* to determine whether the chemical removed from the fabric and present in the broth would prevent the growth of the organisms, and thus falsely indicate that the organisms had been killed. The reinoculated tubes were incubated for 1 week at 37° C. A long incubation period was necessary, as the chemical might have delayed growth.

Additional checks for differentiation between inhibition of growth and death of the test organisms were made by subculturing negative reinoculated tubes: that is, one loopful of the broth into which the test organisms were reinoculated was transferred to a fresh broth tube. This was done to determine whether the reinoculated organisms had been prevented from growing or had been killed by the chemical agent present in the broth. As the trials were exploratory only, the tubes containing the unsterilized materials were subcultured after 96 hours of incubation, and the sterilized materials were subcultured after 48 hours of incubation. The subcultured tubes were incubated at 37° C. for 1 week.

Untreated fabric samples to serve as controls were tested in the same way as the treated fabric samples.

An additional trial was made to test the velocity or speed of action of the antiseptic agent. One square of each test fabric and of the untreated fabric was inoculated with one loopful of a 24-hour broth culture of *E. coli*, and immediately placed in broth. After remaining in the broth tube for 3 minutes with intermittent shaking, the square was removed, placed in a second broth tube for 10 seconds, and then transfered to a third broth tube for incubation. Tubes were incubated at 37° C. for 1 week. Negative tubes after 1 week's incubation were reinoculated with 1 loopful of a 24- hour broth culture of the test organism and again incubated for 1 week at 37° C. Subcultures to broth were made of the reinoculated tubes which showed no growth at the end of 24 hours' incubation. Subculture tubes were incubated at 37° C. for 1 week.

Bacteriostasis, that is, growth prevention, was indicated if the growth of the test organism was delayed as compared with the control tubes, if growth occurred in one or two of the three tubes in which the sample had been washed or incubated, or if the reinoculated tubes remained negative and the subculture tubes showed growth. Bactericidal properties, that is, killing activity, was presumed if all the broth tubes in which the sample had been washed or incubated remained negative, but upon reinoculation showed growth.

None of the treated fabrics nor the chemicals with which they were impregnated were tested for toxicity.

Results

THE results with the agar-plate method for the sterilized and unsterilized fabrics are given in table 1, and the results with the broth test for the same fabrics are presented in tables 2 and 3.

Table 1 shows that when the agar-plate method was used, and the fabric tested without steam sterilization, one of the treated fabrics exhibited good inhibition, five of the treated fabrics gave moderate inhibition, four showed slight inhibition, and two gave no inhibition. When steam sterilized before testing, one of the treated fabrics gave good inhibition, six showed moderate inhibition, two exhibited slight inhibition, and three gave no inhibition. The untreated fabric did not prevent the growth of the test organism.

When the broth procedure was used, and the fabric tested 24

TABLE I
INHIBITION OF ESCHERICHIA COLI BY IMPREGNATED FABRICS AS TESTED BY THE AGAR-PLATE METHOD[1]

Chemical used to impregnate fabric	Inhibition at 48 hours	
	Fabric steam sterilized before test	*Fabric not steam sterilized before test*
Thymol and phenyl salicylate.	Slight	Slight
A condensation compound with chlorthymol and morpholine.	Slight[2]	Slight[2]
Chlorthymol	None	Slight
Alk. dimethyl benzyl ammonium phosphate	Moderate[3]	Moderate[3]
Cadmium chloride with sodium oleate	Good[3]	Good[3]
Cutch in cupric ammonium solution.	Moderate	Moderate
Copper sulphate with morpholine	Moderate	Slight
Cadmium chloride with morpholine	Moderate[3]	Moderate[3]
Acetone-formaldehyde resin...	None	None
Acetylation mixture with acetic acid and acetic anhydride...	Moderate[3]	Moderate[3]
Copper sulphate and sodium oleate	Moderate	Moderate
Dichloramine T	None	None
Untreated fabric (control).....	None	None

[1] Zones of inhibition for 3 plates averaged and interpreted as follows:
no zones = no inhibition
0.2-1.9mm. diam. = slight inhibition
2.0-4.9mm. diam. = moderate inhibition
5.00mm. and over = good inhibition
[2] Zones very irregular.
[3] Zones clouded by chemical agent.

PYRETHRUM
and
1942 HOUSEHOLD INSECTICIDES

1. Pyrethrum will continue to be the most important ingredient in household insecticides in spite of available substitutes because it has the great advantage of killing the insects without annoying and irritating the customers.

2. Present indications are that Pyrethrum will be available for 1942 in ample quantity and on a stable and reasonable price basis.

3. A longer range view of the future justifies the prediction that world supplies will continue to be ample and that prices will be free from unreasonable speculative fluctuations.

4. When Pyrethrum concentrate is used in combination with other toxic principles, as is frequently the case, D & O PYRETHRUM EXTRACT No. 20 ODORLESS will give dependable results because of its complete freedom from extraneous chemical impurities and its unusually small proportion of natural fats, waxes, etc.

5. D & O PYRETHRUM EXTRACT No. 20 ODORLESS has proved itself as the finest Pyrethrum concentrate ever produced on a commercial scale, at least equal to the best in knockdown and kill, and definitely superior in stability, clarity, and freedom from odor.

DODGE & OLCOTT COMPANY

180 Varick Street **New York, N. Y.**

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

Plant and Laboratories . . . Bayonne, N. J.

TABLE II

GROWTH OF ESCHERICHIA COLI TESTED BY THE BROTH PROCEDURE. PLACED IN BROTH 24 HOURS AFTER INOCULATION OF IMPREGNATED FABRICS.

State of fabric	*Chemical used to impregnate fabric*	*Sample Number*	**Observation for growth**						
			Original tubes (Incubated 1 week)			*Original tubes reinoculated (Incubated 1 week)*			*Subculture of reinoculated tubes (Incubated 1 week)*
			Tube I	*Tube II*	*Tube III*	*Tube I*	*Tube II*	*Tube III*	*Tube III*
Steam sterilized before inoculation	Thymol and phenyl salicylate	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	A condensation compound with chlorthymol and morpholine	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Chlorthymol	1	+	+	+				
		2	—	—	+*	+	+		
		3	+	+	+				
	Alk. dimethyl benzyl ammonium phosphate	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Cadmium chloride with sodium oleate	1	—	—	—†	+	+	—†	+
		2	—	—	—†	+*	+	—†	—
		3	—	—	—†	+	+	—†	—
	Cutch in cupric ammonium solution	1	—	—	—	+	+	—	+
		2	—	—	—	+	+	—	+
		3	—	—	—	+	+	—	+
	Copper sulphate with morpholine	1	—	—	—	+	+	+*	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Cadmium chloride with morpholine	1	—	—	—	+	+	+*	
		2	+*	—	—		+	+*	
		3	—	—	—	+	+	+*	
	Acetone-formaldehyde resin	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Acetylation mixture with acetic acid and acetic anhydride	1	—	—	—	+	+	+*	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Copper sulphate and sodium oleate	1	—	—	—	+	+	+*	
		2	—	—	—	+	+	+*	
		3	—	—	—	+	+	+*	
	Dichloramine T	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Untreated fabric ((control)	1	+	+	+				
		2	+	+	+				
		3	+	+	+				
Not steam sterilized before inoculation	Thymol and phenyl salicylate	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	A condensation compound with chlorthymol and morpholine	1	—	—	—	+	+	—	—
		2	C	—	—		+	+	
		3	—	—	—	+	+	—	—
	Chlorthymol	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	C	—	+	+	+	
	Alk. dimethyl benzyl ammonium phosphate	1	—	—	—	+	+	—	—
		2	—	—	—	+	+	—	—
		3	—	—	—	+	+	—	—
	Cadmium chloride with sodium oleate	1	—	—	—†	+	+	—†	+
		2	—	—	—	+	+	—†	+
		3	—	C	—	+		—	+

"...no insecticide has yet been found which equals pyrethrum in knockdown effect."

"Trend and Progress in Insecticides"
by J. T. Martin and F. Tattersfield,
Rothamsted Experimental Station
(Great Britain)

YOUR YARDSTICK of insecticidal effectiveness in a pyrethrum extract lies in its content of pyrethrins — the recognized active paralytic and killing principles of Pyrethrum Flowers.

You can put full measure of "knockdown and kill" into your insecticide by using PYREFUME—"The Perfected Pyrethrum Concentrate" which carries the Penick guarantee that:

EVERY 100 cc. of PYREFUME Super 20 CONTAINS NOT LESS THAN 2 GRAMS OF PYRETHRINS

Other outstanding advantages that are winning more and more insecticide manufacturers over to Pyrefume are (1) assured stability, (2) clear blending, (3) unusually non-staining, (4) singularly free from unpleasant odor, and (5) costs today are much lower!

Pyrefume is tough!

. . . Time and again Pyrefume has proved its effectiveness not alone against house flies but . . .

ROACHES
BEDBUGS
ANTS
FABRIC MOTHS
SILVERFISH

S. B. PENICK & COMPANY

50 CHURCH STREET, NEW YORK, N. Y.
735 W. DIVISION STREET, CHICAGO, ILL.

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

TABLE II (Contd.)

GROWTH OF ESCHERICHIA COLI TESTED BY THE BROTH PROCEDURE. PLACED IN BROTH 24 HOURS AFTER INOCULATION OF IMPREGNATED FABRICS.

State of fabric	Chemical used to impregnate fabric	Sample Number	Observation for growth: Original tubes (Incubated 1 week) Tube I	Tube II	Tube III	Original tubes reinoculated (Incubated 1 week) Tube I	Tube II	Tube III	Subculture of reinoculated tubes (Incubated 1 week) Tube III
Not steam sterilized before inoculation	Cutch in cupric ammonium solution	1	—	C	—	+		—	+
		2	—	—	—	+	+	—	+
		3	—	—	—	+	+	—	+
	Copper sulphate with morpholine	1	—	—	—	+	+	+	
		2	—	—	C	+	+		
		3	—	—	—†	+	+	+	
	Cadmium chloride with morpholine	1	+	+	+*				
		2	+	+	+*				
		3	+	+	+*				
	Acetone-formaldehyde resin	1	—	—	—	+	+	+	
		2	--	—	—	+	+	+	
		3	+*	C	C				
	Acetylation mixture with acetic acid and acetic anhydride	1	—	—	—	+	+	+	
		2	—	—	—	+	+	+	
		3	—	—	—	+	+	+	
	Copper sulphate and sodium oleate	1	—	—	C	+	+		
		2	—	—	C	+	+		
		3	—	—	—	+	+	—	+
	Dichloramine T	1	—	—	C	+	+		
		2	—	—	C	+	+		
		3	C	—	C		+		
	Untreated fabric (control)	1	+	+	+				
		2	+	+	+				
		3	+	+	+				

+ = growth of E. coli
— = no growth of E. coli
C = contamination
* = delayed growth
† = broth clouded (apparently due to chemical agent)

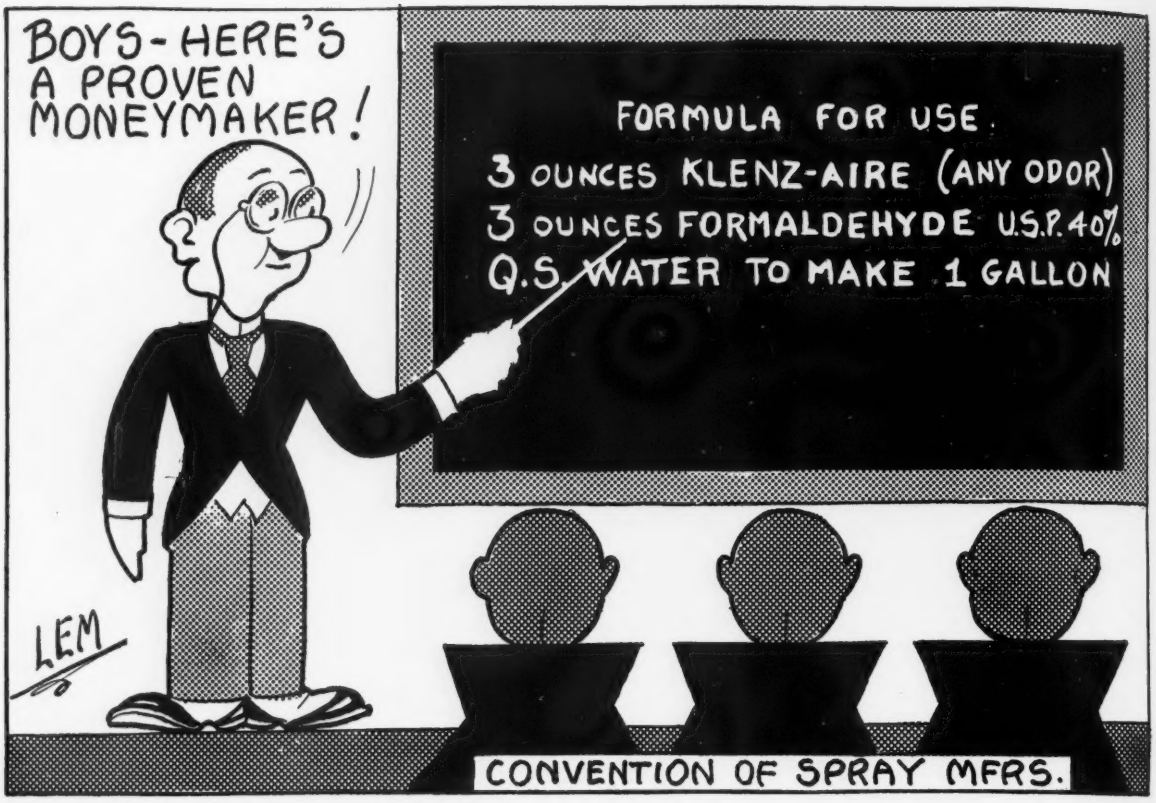
hours after inoculation, 10 of the 12 treated unsterilized materials showed bactericidal activity (see table 2). The untreated fabric exhibited neither bacteriostatic nor bactericidal properties.

The properties of two of the fabrics appeared changed by steam sterilization. For instance, the fabric treated with chlorthymol lost its bactericidal property when steam sterilized, and the fabric treated with cadmium chloride and morpholine showed evidence of bactericidal activity only when sterilized. Several of the unsterilized treated fabrics which were bactericidal for the test organism did not prevent the growth of contaminating bacteria.

Table 3 shows that when the treated fabrics were tested immediately after inoculation by the broth procedure, only two of these materials showed bactericidal properties.

Comparing the results of the broth test made 24 hours after inoculation with those of the agar-plate test, certain discrepancies occur. It should be remembered, however, that the two tests involve different procedures. In the agar-plate method, six or seven of the treated fabrics gave moderate or good inhibition, while 10 of the treated fabrics showed evidence of bactericidal activity by the broth procedure. The fabric treated with chlorthymol and not steam sterilized showed only slight inhibitory properties by the agar-plate method, but exhibited bactericidal activity by the broth test. The fabrics treated with the acetone-formaldehyde resin and dichloramine T did not prevent growth of the test organism by the agar-plate method, but evidenced bactericidal activity by the broth test, when steam sterilized. When either sterilized or not sterilized, fabrics treated with thymol and phenyl salicylate and with chlorthymol condensation compound gave only slight inhibition by the agar-plate test, but evidenced bactericidal activity by the broth test. Fabrics treated with cadmium chloride and morpholine and tested without sterilization exhibited moderate inhibition of the test organism on the agar-plate, but apparently no bacteriostatic or bactericidal action by the broth method.

When the broth test was made immediately after inoculation, only the fabrics treated with the alkylated dimethyl benzyl ammonium phosphate and with cadmium chloride and sodium oleate showed evidence of bactericidal activity. Bacteriostasis was apparent in some of the remaining fabrics. The wide variation in results obtained by the broth procedure emphasizes the influence


BOYS - HERE'S A PROVEN MONEYMAKER!
FORMULA FOR USE.
3 OUNCES KLENZ-AIRE (ANY ODOR)
3 OUNCES FORMALDEHYDE U.S.P. 40%
Q.S. WATER TO MAKE 1 GALLON
LEM
CONVENTION OF SPRAY MFRS.

Klenz-Aire Deodorant Oils

Antiseptic	Honeysuckle	Oriental
Bouquet	Jasmin	Pine Needle
Cedar	Lavender	Rose
Clover	Lilac	Sandalwood
Eucalyptus	Mint	Trefle
Gardenia	New Mown Hay	Wisteria

Formula For Use

3 ounces Klenz-Aire Deodorant Oil
3 ounces Formaldehyde U.S.P. 40%
Balance—water to make one gallon

This formula makes a finished deodorant spray in milky emulsion form which may be colored any shade to make it more attractive.

There is a great field for a deodorant of this type. It kills all tobacco, cooking, theatre and tavern odors. It purifies the air of any public place where crowds assemble. A little of this finished spray solution used by means of a spray directly into public urinals, will have an instant and efficient deodorizing effect.

Klenz-Aire Deodorant Oils will absolutely accomplish what we claim for them. Experiment yourself and be convinced.

Order a Trial Pound

1 lb. lots . . . . . $3.00 lb.
5 lb. lots . . . . . 2.85 lb.
25 lb. lots . . . . . 2.75 lb.

F.O.B. New York

AROMATIC PRODUCTS, Inc.

15 East 30th Street, New York — Factory: Springdale, Conn.

ATLANTA • DALLAS • MEMPHIS • PITTSBURGH • CHICAGO

TABLE III

GROWTH OF ESCHERICHIA COLI TESTED BY THE BROTH PROCEDURE. PLACED IN BROTH IMMEDIATELY AFTER INOCULATION ON IMPREGNATED FABRICS

State of fabric	*Chemical used to impregnate fabric*	Observation for growth								
		Original tubes (incubated 1 week)			*Original tubes reinoculated (incubated 1 week)*			*Subculture of reinoculated tubes (incubated 1 week)*		
		Tube I	*Tube II*	*Tube III*	*Tube I*	*Tube II*	*Tube III*	*Tube I*	*Tube II*	*Tube III*
Not steam sterilized before inoculation	Thymol and phenyl salicylate.	+	+	+	—	—	—	—	—	—
	A condensation compound with chlorthymol and morpholine chlorthymol	+	+	—			+			
	Alk. dimethyl benzyl ammonium phosphate	—	—	—	+	+	+			
	Cadmium chloride with sodium oleate	—	—	—	+[1]	+[1]	+[1]	+	+	+
	Cutch in cupric ammonium solution	+	+	+[1]						
	Copper sulphate with morpholine	+	+	+						
	Cadmium chloride with morpholine	+	+	+[1]						
	Acetone-formaldehyde resin...	+	+	+						
	Acetylation mixture with acetic acid and acetic anhydride...	+	+	+						
	Copper sulphate and sodium oleate	+	+	±			+[1]			+
	Dichloramine T	+	+	+						
	Untreated fabric (control)....	+	+	+						

+ growth of E. coli — no growth of E. coli ± questionable growth [1] delayed growth

of the time interval between inoculation and placement in broth.

Discussion

IF it is desired to test the value of a fabric from the standpoint of preventing growth of an aerobic organism in a nutritive media, the agar-plate method appears to be satisfactory. This procedure has been used for many years to test the bacteriostatic properties of certain antiseptic agents. The test is applicable to a number of readily cultivated aerobic organisms provided that a suitable medium is employed. It is a simple test to perform and results may be obtained within 48 hours.

Assuming that it is desirable, however, to test the hygienic value of an impregnated fabric under certain conditions, it is important to determine whether the test organism has been killed or whether it has only been prevented from growing. It should be borne in mind that bacteriostatic and bactericidal properties cannot be readily distinguished, and that their differentiation is arbitrary and therefore dependent upon test conditions. Marshall[7] states, "There is no clear definition in the accepted sense between a death rate which might indicate germicidal action and a death rate which might be regarded as bacteriostasis." There is, however, a significant difference between an organism which has been killed and an organism which has been weakened. The killed organism is not a potential danger; the attenuated organism, transplanted to a fertile environment, is a potential danger.

The agar-plate method does not determine bactericidal activity. Subculturing from clear areas has been recommended by Reddish[8] to test for this property. In preliminary trials in this laboratory, subculturing led to irregular results. The agar-plate method possesses other disadvantages. For instance, it can only determine the anti-bacterial effect of the test material on a given organism embedded in a moist environment. Also, observation for inhibition made at 24 hours may give entirely different results from those obtained at 48 hours. The interpretations placed upon such results may vary widely according to the judgment of the worker.

The broth procedure possesses certain advantages over the agar-plate method. The broth test determines both bacteriostatic and bactericidal activities and differentiates these properties. It also tests the antibacterial effect of the fabric when a given organism is placed directly upon the fabric. The final interpretation of results are not so dependent upon personal judgment as are the interpretations of the agar-plate test nor are comparative results likely to be so variable. This method offers a basis for a standard procedure by which the relative antibacterial properties of a wide variety of chemically treated fabrics may be compared.

In addition, the procedure may be adapted to study the hygienic value of antibacterial fabrics under varying conditions. For instance, various time intervals after inoculation of the fabric, other than the 24-hour period, should be investigated. Such a study would test the speed with which a given chemical might affect the test organism. The test organism, the amount of inoculum, and the manner of inoculation may be considered further. Subculturing is informative and might be extended. Other factors which might be considered include the temperature at which the test is made, the composi-

(Turn to Page 119)

NO ONE COULD WANT A BETTER *Polish*

for ANY METAL POLISHING JOB.
Years of experience in manufacturing polishes of many kinds have taught us how a really fine metal polish should be made . . . to actually dissolve tarnish chemically so that a soft cloth wipes it away . . . to eliminate hard rubbing . . . to restore brilliance and deposit a protective coating that retards oxidation. Because tarnishing is retarded, cleanings are needed less frequently, thus saving time and cost. It comes in two tones, as preferred—WHITE, for lighter colored metals, and BROWN, for copper or bronze. It's non-inflammable.

Why not build better business by stocking and selling this finer Metal Polish as a standard item for your customers. Once they use it, they'll be back for more, and more! Mail coupon today for information on superior maintenance products to fit your needs.

R. M. HOLLINGSHEAD CORPORATION
Industrial Division
Camden, N. J. • Harborside, Jersey City, N. J. • Toronto, Ont.

MAIL COUPON NOW!

R. M. Hollingshead Corp. *(Industrial Division)*
840 Cooper Street, Camden, N. J.
I am interested in the products checked:
☐ Floor Waxes ☐ Pine Cleaners ☐ Metal Polish
☐ System Soap ☐ Degreasing Compound
Name
Address
City, State
By

THE MAC-LAC COMPANY

INCORPORATED
127 Maiden Lane New York, N. Y.

Manufacturers for More Than 50 Years

SUPERIOR QUALITY

REFINED SHELLAC

DEVELOPED ESPECIALLY FOR USE IN NO RUBBING WAXES

- *Economical*
- *Dissolves Readily*
- *Low in Acid*
- *Gives Beautiful Film*

We Also Offer
EXTRA WHITE BONE DRY and all other grades of SHELLAC

Samples Upon Request
TRY THESE WITHOUT OBLIGATION AND CONVINCE YOURSELF

THE MAC-LAC COMPANY

INCORPORATED
FACTORY: RAHWAY, N. J.

PLANT SPRAYS

A REPORT ON THE FEASIBILITY OF THE USE OF HOUSEHOLD INSECTICIDES FOR PLANT SPRAY PURPOSES

PART II

By THOMAS L. CARPENTER*

Sinclair Refining Company

CONSIDERABLE emphasis was placed on that phase of the study concerned with the phytocidal effects of the most common toxic ingredients incorporated in the present day household sprays. These tests were not designed to give critical information, however, certain pertinent data was desired in regard to the use of certain synthetics employed as substitutes or activators for pyrethrum. Accordingly, tests were made of a wide range of dilutions of those synthetics, as well as of several intermediate solvents of rotenone and nicotine, oil soluble fungicides, and pyrethrum extracts.

Sinclair's Insecticide Base was used as the base for the test dilutions which were applied at the rate of 15 milligrams per square inch of bush bean foliage grown under field conditions. Check plots were sprayed with straight base which obviated any error due to injury caused by the base itself.

In view of the pyrethrum situation and the ever increasing popularity of the fortification of household sprays with one or another of the synthetics, our results, as obtained under the conditions of our investigation, were extremely discouraging in that the synthetics tested proved injurious to the foliage. This was likewise true of the intermediate solvents recommended for rotenone and its allied toxicants. Butyl alcohol as an intermediate solvent for nicotine showed considerable burning, as did oleic acid, however, the toxicities noted with the latter were probably due to the increased viscosity of the entire solution of solute and solvent. All concentrations of the pyrethrum extracts proved non-injurious; and in this connection it might be well to mention the evidences of the stimulatory effects of straight oil pyrethrum sprays applied in a large scale test on the control of the potato leaf-hopper, wherein it was found that the treated potato vines showed a more vigorous growth and remained greener longer than did the check plants and those treated with Bordeaux Mixture.

In our more or less exploratory studies of 1937, we noted that certain species of test plants were definitely more susceptible to acute oil injury than others, and, since we were unable to find any reliable references to the relative tolerance of the various common economic plants, we initiated a study for this purpose.

Seventy-two species of economic plants were tested over a two-year period in our effort to expose those species which might not tolerate the proposed dual purpose spray. Sinclair's Insecticide Base, a slightly heavier experimental fraction, and two other insecticide bases which are recommended for plant spray purposes were atomized to these plants at the rate of approximately 19 milligrams per square inch of leaf surface. This rate of application caused a heavy "wetting" of the various foliages and was far in excess of the amount needed for insect control, but which was necessary in order to obtain significant differences in tolerance. The results of the experiment were determined from observations made at 24 hour intervals over a period of four days, and thereupon the individual species were classified as susceptible, intermediately susceptible, and tolerant.

An analysis of the gross results indicated that the vegetable plants and fruit trees were quite tolerant of the oils tested, and though the ornamentals were not so tolerant as a group, they still showed a relatively high degree of resistance. Since the application was necessarily in excess of that which would normally be used in insect control, it appeared evident that, with the proper precautions, even the most susceptible species could be safely sprayed.

In a classification of plant families with regard to their relative tolerance, the legumes, as represented by peas, beans, and lupines, appeared to be the most sensitive, followed in order of decreased likelihood of injury by the solanaceous plants, such as tomato and potato. The crucifers, such as cabbage and cauliflower, were the most tolerant of all those tested. Certain morphological characteristics appeared to govern this variance in resistance to oil injury. The foliage of solanaceous plants is characterized by being very pubescent, with the probable result that these hairs act like a blotter and hinder normal volatilization of the oil, with subsequent burning.

This factor of pubescence is also true of some of the legumes,

* Before 27th mid-year meeting, National Association of Insecticide & Disinfectant Manufacturers, Chicago, June 9 and 10, 1941.

BUCKINGHAM PRODUCTS OF MERIT

STABLE

SELF POLISHING WAX
WATERPROOF-SKIDPROOF
LIQUID WAX
POLISHING TYPE
PASTE WAX
DANCE WAX
WAX CLEANER
FURNITURE POLISH
FLOOR SEAL
GYM FINISH
BOWLING ALLEY POLISH
RUG SHAMPOO
CONCENTRATE
SCRUB SOAPS
METAL POLISH

UNIFORM

PUT UP UNDER YOUR LABEL—WE FURNISH LABEL

Every product manufactured under accurate chemical control

BUCKINGHAM WAX CORP.

VAN DAM STREET & BORDEN AVENUE LONG ISLAND CITY, NEW YORK

CRESYLIC ACID — FORMALDEHYDE

AROMATICS

Phenyl Ethyl Alcohol
Methyl Acetophenone
Acetophenone
Geranyl Acetate
Yara Yara
Phenyl Ethyl Acetate
Amyl Cinnamic Aldehyde
Benzyl Acetate
Benzophenone
Nerolin

For Soaps, Perfumes, Cosmetics, etc.

ASSOCIATED COMPANIES

KAY-FRIES CHEMICALS, INC.
NEW YORK, N. Y.

CHARLES TENNANT & CO. (CANADA) LTD.
TORONTO, CANADA

AMERICAN-BRITISH
CHEMICAL SUPPLIES, Inc.
180 MADISON AVE., NEW YORK

but what seemed even more important was their poorly organized mesophyll tissue. This tissue is characterized by loosely arranged cells and large intercellular spaces which undoubtedly facilitated the rapid spread of the oil. We believe that the resistance shown by the various crucifers was due to the heavy protective cuticle and waxy bloom of the epidermal cells.

Minor related studies carried on in connection with this phase of our investigation indicated that immature leaves were more easily injured than mature or senile leaves; that undiluted sprays did not affect normal fertilization or fruit set in the plants tested, even though the petals and sepals were very easily injured; and that ripened seed might be sprayed without affecting normal germination.

SINCE experiments conducted in relation to the phytotoxic nature of the household sprays clearly indicated that one had to be concerned with the quantity as well as the quality of the spray applied to plant foliage, a study of the adaptability of the various types of common household sprayers seemed in order.

Forty-eight sprayers of both the intermittent and continuous types as produced for ten different companies marketing household insecticides were used in our studies. Sinclair's Insecticide Base was used as the test spray and the susceptible bush bean was used as the test plant. Data was taken on the volume delivery per fifty strokes, the character of the spray delivered, the action of the sprayer when held in a downward diagonal position, and the general adaptability for plant spray purposes as determined from observations made of foliage injury resulting when each sprayer was used by an inexperienced and unbiased helper, and from observations made as each of the sprayers was operated by someone experienced with the phytotoxic nature of the petroleum oil distillates. Employing the inexperienced laboratory aide made it possible to obtain results which would be nearly analogous to those one might expect with the average consumer.

An analysis of the net results as obtained under the conditions of the tests indicated quite clearly that for the most part the common hand sprayer produced for household spray purposes is not adaptable to plant spray purposes. Of the forty-eight sprayers tested, but two of the samples proved ideally suited to the purpose. The failure of forty-one of the sprayers to atomize the spray when held in a downward diagonal position as would be necessary in the spraying of most plants proved the most obvious limiting factor.

Also particularly pertinent and interesting was the utter lack of significance between the volume delivery of a sprayer and its suitability for the spraying of plants. This fact was well exemplified by the results which showed that a sprayer delivering but 6.0 grams of base per fifty strokes caused more injury than another sample which delivered 42.6 grams per fifty strokes.

This unanticipated result was, however, solved by our study of the character of the spray each sprayer delivered, whereupon we found that foliage injury should correctly be correlated with dropsize rather than with volume delivery of a particular sprayer.

It was found that some of those sprayers in the lower range of volume delivery atomized a spray consisting of a small number of large droplets which, however, heavily wet areas of the test foliage, with subsequent "burning." Certain other sprayers in the higher range of volume delivery atomized a mist of ultra minute droplets which did not wet the foliage but which also had no insecticidal value. A wide range of atomization between these two extremes was noted; however, only two sprayers produced the necessary medium to heavy mist of intermediate size droplets which caused no injury to the test plants and yet showed effective control of the various phytophagus insects.

THE question of whether or not the repeated use of a household spray would cause a "stunting" or otherwise deleterious effect upon plant growth was investigated on both greenhouse and field-grown plants.

For a preliminary study, a greenhouse test was designed during the winter of 1937-1938. Cabbage and tomato plants of a standard variety were selected so as to all be identical in size, number of secondary leaves, and general appearance. 125 plants of each species were transplanted to new seven-inch clay pots, each containing 850 grams of earth which was homogeneous as to moisture content and nutritive value. The potted plants were then divided into five groups of twenty-five plants each and designated as Check, B, C, D, and E. The individual plants in each group were then randomized in a modified Latin Square.

The plants were watered with 150 c.c. of tap water twice a week, and two weeks after the date of transplanting, a spray program was started according to a definite schedule. The first week all groups but the Check were sprayed; the second week all groups but the Check and Group B; the third week all groups but the Check and Groups B and C; and the fourth week only Group E was sprayed. Thus, the plants in Group B received one spray, those in Group C received two, those in Group D received three, and those in Group E received the maximum of four.

Three weeks after the application of the last spray, the plants were removed from the pots and washed free of soil. Thereupon each group was thoroughly examined for evidences of an accumulative toxic effect and we discovered that there was a general dwarfing of all parts of both root and shoot of the plants in Group E which had been sprayed four times. Green and oven-dryed weights indicated that the differences

EASIER SALES — MORE REPEAT ORDERS FOR YOUR INSECTICIDES WITH

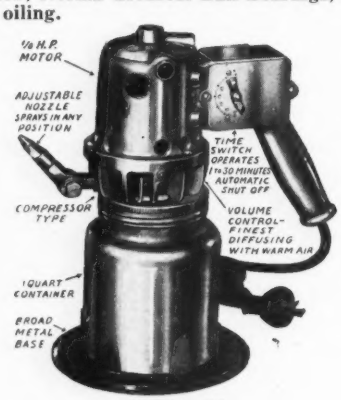
Adam A. Breuer's

ELECTRIC SPRAYERS

3 BIG BALL BEARING SPRAYERS FOR LARGE AREAS

Model 6A, 1/3 H.P.—Model 8A, 3/5 H.P.—Model 10A, 1 H.P.

These powerful, blower-type sprayers project a fine mist for distances of 20 to 40 feet and more. Designed for quantity insecticide users such as warehouses, food product factories, dairy barns, restaurants, etc. GE motors; Norma Greaseal Ball Bearings, which require no oiling.


1/8 H.P. MOTOR
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES 1 TO 30 MINUTES AUTOMATIC SHUT OFF
COMPRESSOR TYPE
VOLUME CONTROL-FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER
BROAD METAL BASE

MODEL 54

3 PROVEN COMPRESSOR—TYPE MODELS

Exclusive patented principle siphons liquid through the compressor providing continuous automatic lubrication and warming liquid above room temperature for maximum diffusion and penetration. Air volume control regulates density of spray, adjustable nozzle sprays upward or downward at any angle. Model 54 (illustrated) has one quart aluminum container, 1/8 H.P. GE Motor. 30 minute automatic time switch. Model 53, similar to model 54, but without the time switch feature. Model 36A, one-gallon capacity 1/3 H.P. GE Motor, 30 minute automatic time switch.

Write for full particulars and prices to the trade

BREUER ELECTRIC MFG. CO.

5118 North Ravenswood Ave., Chicago, Illinois

We do not sell insecticides. Our business is manufacturing sprayers. Patented in U. S. A. and foreign countries.

STOP DESTRUCTION —*Before* IT HAPPENS!

PAINT PROTECTS AMERICA

Proper protection of floors helps Protect America. Undue wear on floors caused by lack of protection or poor protection creates a tremendous waste each year—a waste that America cannot afford. This waste means material for replacement and labor that could be profitably used in defense work. The floors of every schoolroom, gym, industrial plant, office, auditorium, hallway and home should be finished NOW—to save wear and waste.

Protective coatings — paint — varnish—floor finishes—protect America.

FEDERAL FLOOR FINISHES for FLOOR PROTECTION

Federal is famous for fine finishes—specialized for each purpose.

Our Gym Finish, Fed-Co Sealer, Mop-Var, Lightning Lustre and other products are used by foremost floor finishers to Protect American Floors against destruction and waste.

Send for Literature

FEDERAL VARNISH CO.

FLOOR FINISH DIVISION

DEPT. 941 331-337 S. Peoria St. CHICAGO

FEDERAL

were not due to increased moisture content, but were truly a general retardation of development.

On the basis of these results a similar test was designed under field conditions. Three standardized horticultural varieties of vegetables were used in these tests which were carried on over a two-year period. The JTD variety of tomato, the Triumph variety of potato, and the Marion Market variety of cabbage were planted in randomized plots which were replicated six times. The identical spray schedule and method of analysis as used in the greenhouse study was repeated in these tests.

The results obtained from the field tests, however, showed no evidence whatsoever of accumulative toxicity and all variance in relation to the Check were in the range of experimental error. An explanation of this absence in field-grown plants of the accumulative toxicity evidenced in the greenhouse plants was believed to lie in the fact that plants grown under greenhouse conditions are less hardy than field grown plants. The leaves are usually much more succulent and the epidermis has less cuticle, making it more liable to oil injury. Another probable factor in answer to this difference in reaction to repeated sprays is that the sprays in the greenhouse test were applied in mid-winter when it was necessary to keep the building tightly closed, consequently eliminating the ventilation necessary to facilitate volatilization of the oil from the surface of the foliage.

From these tests we concluded that it would be unsafe to use more than three applications of an undiluted distillate to greenhouse plants, but that four could be used quite safely under field conditions.

A limited number of tests were performed with a representative group of phytophagus insects commonly found on vegetable and ornamental plants to evaluate the insecticidal properties of the various oil soluble contact insecticides. Considerable diversity in the toxic values was noted among the different species, and even though there were instances of definite specificity between insecticide and insect, those sprays containing typical percentages of the common contact insecticides proved to have particularly wide ranges and would, for the most part, effectively control those pests one would commonly encounter.

In summing up the results of the various phases of our investigation, the ultimate objective of which was to determine the possibility of using a household spray for plant spray purposes, we were able to conclude that a spray having a base with the proper specifications and which contained non-injurious toxicants could be safely used if properly applied with the proper equipment, but in consequence of the fact that the average consumer would not likely use the proper precautions or proper equipment, we did not believe we were justified in recommending the production of a spray for the dual purpose at the present time. The future development of non-phytotoxic ingredients as well as the production of a hand sprayer suited to the application of a plant spray may very well alter the picture, but under the present conditions I sincerely believe one jeopardizes the popularity and widespread present day acceptance of household sprays by recommending their use for the control of plant pests.

Acknowledgment

The author acknowledges, with gratitude, the helpful guidance of Dr. T. C. Allen of the University of Wisconsin, and Mr. N. J. Gothard of Sinclair Refining Company.

Value of Rotenone Roots

The insecticidal quality of rotenone-containing materials is customarily expressed in terms of rotenone and total extractives. The rotenone content has definite insecticidal significance, but the toxic action of the extractives, other than rotenone, may vary with the source of the material. This study is an attempt to correlate the chemical nature of rotenone and the rotenoids from *Tephrosia virginiana* with their toxic action on the adult housefly.

The materials were prepared as follows: *Tephrosia* roots were extracted by percolation with chloroform, the residue from evaporation of the extract in chloroform was taken up with ether, and the rotenone was separated by crystallization. The alkali-soluble portion of the ether solution was obtained by extraction with 5 per cent of caustic potash solution, and recovery by acidification of the alkaline solution. The alkali-insoluble resin was freed of rotenone and divided into a neutral resin and an oil by partition with 90 per cent acetic acid and petroleum ether. The oil was more soluble in the petroleum ether than in the acetic acid solution. A small amount of a crystalline compound melting at 76° C. was isolated from the alkali-soluble fraction, and two compounds, ($C_{22}H_{24}O_4$ melting at 125° C. and $C_{21}H_{22}O_4$ melting at 131° C.) were isolated.

The neutral resin fraction, dissolved either in kerosene-cyclohexanone solution or in acetone, possessed considerable toxicity to the housefly. This fraction comprises about 50 per cent of the total extractives of *Tephrosia*. The alkali-soluble fraction and the oil were non-toxic. Since the oil comprises 23 per cent of the total extractives, it should be considered in evaluating the root from the total extractive content. The two crystalline compounds, isolated from the neutral resin, were non-toxic. Lyle D. Goodhue and W. N. Sullivan, *J. Econ. Entomol.* 34, 77-8 (1941).

Rating Germidical Activity

To determine chemically the relative effectiveness of the germicidal action of sodium hypochlorite solution, both in the presence and absence of organic matter, the oxidation-reduction potential is measured. This gives an accurate indication of the germicidal activity, of different concentrations of hypochlorite solution, although neither the starch-iodine nor the *ortho*-tolidine titrations do so. W. L. Mallman and Wm. B. Ardrey, Michigan Eng. Expt. Sta., *Bull.* No. **91,** 36 pp.

DON'T BREAK ALL THE RULES

—just because many materials are scarce and some unobtainable don't break your RULE of "Uniform quality" when it becomes necessary to substitute or change the PERFUMES in your product.

If you are having difficulties in securing perfume materials let our laboratories work with you. Perhaps some substitution or suggestion will be the answer. Let us demonstrate how you can keep your rule of uniform quality of perfumes unbroken.

For the manufacturers who are desirous of obtaining a new perfume we are in a position as before to supply from spot stock the correct perfume for your particular product.

—PERFUMES FOR ALL PRODUCTS—

P. R. DREYER INC.

119 West 19th Street

Essential Oils — New York, N. Y. — *Aromatics*

Also 35 representatives in principal cities

Reilly COAL TAR PRODUCTS

FOR THE SOAP AND DISINFECTANT INDUSTRY

CRESOLS
CRESYLIC ACIDS
TAR ACID OILS
XYLENOLS
NAPHTHALENE

Also REILLY Bonded Roofing and Waterproofing materials for your plant; REILLY CREOCOTE paints for creosoted wood block floors and other creosoted surfaces; REILLY Protective Coatings for structural steel, tanks, pipe lines, water conduits.

15 PLANTS...

REILLY TAR & CHEMICAL CORPORATION

1627 Merchants Bank Bldg., Indianapolis, Ind.
500 Fifth Ave., New York
2513 S. Damen Ave., Chicago

To Serve You

NEWS...

A. S. Boyle Buys Dwin

The Dwin division of Baldwin Laboratories, Saegertown, Pa., was sold last month to A. S. Boyle Co., Jersey City, parent company to American Home Products Corp., in a cash transaction. Principal product of the division is "Dwin" insecticide, manufacture of which will be commenced very soon in the Jersey City plant of the Boyle Company. "Dwin" has been added to the American Home line of household specialties. Machinery and equipment for the manufacture of the insecticide has just been moved to Jersey City. All the other manufacturing departments of Baldwin Laboratories, including a plastics division at Franklin, Pa., remain unchanged. The Dwin sale was carried out by a group which earlier had bought out W. H. Baldwin, executive vice-president and founder of the firm, for an unannounced sum.

Lehn & Fink Profits Rise

Lehn & Fink Products Co., New York, recently reported net income for the fiscal year ended June 30, 1941, of $770,360, equal to $1.92 a capital share. For the previous year, net income was $621,349, or $1.55 a share.

Chemical Supply Elects Nelson

Henry Nelson, for seventeen years vice-president and general manager of Chemical Supply Co., Cleveland, was elected president of the company at a meeting of the board last month. He continues as general manager. Mr. Nelson's association with Chemical Supply Co. dates back to 1919 when he entered the employ of the firm as a stenographer shortly after being discharged from the U. S. Army. By 1924, he had become sales manager and in that same year was made vice-president and general manager, in which capacity he served until last month. At the same meeting, J. W. Ellis, retiring president of the company, became chairman of the board, J. M. Williams, former

HENRY NELSON

secretary, was elected vice-president and Arthur E. Nicholls became secretary and treasurer. Both Mr. Williams and Mr. Nicholls have been with the company for fifteen years or more.

A.I.F.A. Meets Sept. 11-12

The Fall meeting of the Agricultural Insecticide and Fungicide Association will be held September 11th and 12th at the Buckwood Inn, Shawnee-on-the-Delaware, Pa. Highlights of the meeting will be an outline of the Association's program for the coming year by President Warren H. Moyer, discussions on problems of national defense as they apply to the industry and other topics of interest, and addresses by prominent speakers. Those scheduled to speak at the meeting are: Judge J. Harry Covington; Prof. W. B. Flint, chief entomologist of the Illinois Agricultural Experiment Station; Philip H. Groggins, chief of the Agricultural Chemicals Division of the Office of Agricultural Defense Relations, U. S. Department of Agriculture; Dr. R. C. Roark, in charge of insecticide investigations, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture; Richard B. Scandrett, Jr., of Scandrett, Tuttle & Chalaire; and, if conditions at Washington permit, Edwin B. George, chief of the priorities and emergency facilities of the bureau of research and statistics, OPM. Reports will also be heard on the activities of association committees.

The registration fee of five dollars for the meeting, includes the dinner Thursday and a special dinner Friday evening. A golf tournament will be held Friday afternoon after all business is completed. Fee for the tournament is $2.50.

Colorado Insecticide Labeling

Formula disclosure on insecticide labels is not required under the new Colorado Insecticide Law, according to a communication from W. C. Sweinhart, director of the Colorado Department of Agriculture, addressed to the National Association of Insecticide & Disinfectant Manufacturers, who protested against this provision in the Application for Registration in the new law. Name and percentage of each active ingredient, with the total of inerts, is required to be filed with the application, but on labels they are accepting the statement "Active Ingredients 100 per cent" in lieu of detailed statements which would disclose formulae.

Fuld Aids Health Campaign

"Defense Through Health" is the keynote of posters suitable for display in store windows currently being distributed by Fuld Bros., Baltimore. The 12 by 18-inch posters depict a night anti-aircraft barrage, across which is emblazoned, "Sanitation Chemicals Defend the Health Front." Each poster is accompanied by a direct mail piece telling retailers, "Guns, planes, tanks, battleships will defend us against invasion. Disinfectants, insecticides, cleaners, and sanitation chemicals are equally important, as they defend us against filth and disease. With this thought

PINE OIL and COAL TAR DISINFECTANTS—

√ GUARANTEED ANALYSIS

√ MILKY WHITE EMULSIONS IN WATER

√ DEFINITE GERMICIDAL VALUE

All the qualities that go to make outstanding Pine Oil and Coal Tar Disinfectants will be found in those manufactured by:—

THE CHEMICAL SUPPLY CO.

2450 CANAL ROAD -:- **CLEVELAND, OHIO**

With 43 years' experience in the manufacture of Disinfectants selling the jobbing trade exclusively for private brand and label.

Send for samples and further information

SELF POLISHING WAX
WAX SOAP CLEANER
MARBLE & TERRAZZO CLEANER
YOUR LABEL
PENETRATING WOOD SEAL
GYM SEAL
FURNITURE POLISH
Quality Finishes Under Your Own Label
SELF POLISHING WAX • WAX SOAP CLEANER • MARBLE and TERRAZZO CLEANER • PENETRATING WOOD SEAL • GYM SEAL • FURNITURE POLISH
Franklin Research Co. offers a complete PRIVATE LABEL service—designing (if desired) and putting on your label, helping in the design of your sales literature, providing trained factory men to help you in specific floor problems, supplying you with dependable products that are consistently good because of rigid laboratory and factory control.
Write today for details
FRANKLIN RESEARCH COMPANY
Philadelphia
Distributors and Warehouses in All Principal Cities

in mind, Fuld Bros., by helping to make the public conscious of the need for sanitation, are contributing to 'Defense Through Health'."

Timbo Pioneer Dies

John James, the founder of John James & Co., Delem and Para, Brazil, timbo insecticides, died July 31 at his home at Sayville, Long Island. He was fifty-five years old. Mr. James was the first producer of timbo root on a commercial scale for use as an insecticide. A native of San Antonio, Texas, Mr. James became familiar with Brazil when, in 1907, he was put in charge of clearing the right of way for the Madeira-Mamore Railroad through the Brazilian jungles. It was 1911 before he finished that job. Then he went in for rubber planting and cattle raising, remaining in Brazil until 1932. While in the country, he learned that rotenone derived from timbo root had been found useful in ridding sheep of ticks and killing bugs on grape vines. It had not been put into commercial use, however.

After a trip to the United States, Mr. James returned to Brazil, set up a factory, and began buying and processing timbo roots. It was several years before the quality of the insecticide was appreciated, but after three years he sold two million pounds and began setting out timbo plantations, realizing that a drain on the wild plants might cause a shortage. George W. Cole & Co., New York, are agents for the Centro Agricola & Industrial de Timbo, Ltd., Belem-Para, Brazil, which company receives timbo ground by John James & Co.

Cal. Adopts Creosote Specs.

Specifications for creosote, light and heavy coal-tar oils and other oil residues were announced recently by the director of the California Department of Agriculture in a proclamation known as Economics Poisons Regulation No. 1 (Revised), which became effective August 25. Physical properties and distillation ranges of the various oils are specified and regulations pertaining to labeling are given in detail.

Maryland Issues Fluoride Rules

A regulation prescribing that all insecticides containing sodium fluoride or other salts of hydrofluoric acid must be colored Nile blue has recently ben adopted by the Maryland State Board of Health. The full text of the ruling follows:

"Pursuant to the powers conferred upon the State Department of Health by Section 269, Article 43, of the Annotated Code of Maryland, the following regulation governing the sale of sodium fluoride and preparations containing sodium fluoride to be used as insecticides is hereby adopted:

No person, firm, corporation, partnership, or association, shall give away, sell, or offer for sale, or use as an insecticide or exterminator, any sodium fluoride in powder form, or any preparation in powder form containing sodium fluoride or other salt of hydrofluoric acid, unless said powders are distinctly colored Nile blue, as designated by Ridgway's **Color Standards and Nomenclature** or Maerz and Paul's **A Dictionary of Color.**

This regulation shall not be construed to apply to the use of compounds or preparations of fluorine, or to the use of salts of hydrofluoric acid used for industrial or agricultural purposes."

California Pest Control Moves

California Pest Control Co. has recently moved to new and larger headquarters at 838 South Central Ave., Los Angeles. Mr. McLean, well known to agriculturalists throughout the state, is now in charge of the new office. In addition to manager McLean, the staff consists of H. D. McBride, Ray Haufler, and R. E. Bell. Mr. Bell is the newest member of the staff.

Priorities on Formaldehyde

Formaldehyde was placed under full priority control on August 22. The order also included paraformaldehyde and hexamethylenetetraline, as well as synthetic resins produced from these materials. All defense deliveries are assigned a preference rating of A-10 and producers are required to accept defense orders except under certain conditions. Deliveries of the three chemicals for all non-defense, non-plastic uses, have been assigned a preference rating of B-4. A price ceiling on formaldehyde, ranging from 4.25c to 9.5c a pound, fob major shipping points, had previously been set. The possibility of a price ceiling on citronella oil is also being studied by the O.P.A.C.S.

Plowfield in Hospital

W. F. Plowfield, director of sales for R. M. Hollingshead Corp., Camden, N. J., is confined to the Royal Palm Hospital, Pinewald, N. J., as a result of an accident sustained August 18 while fishing off Toms River, N. J. He expected to return to active duty by about the middle of September.

Tanglefoot Co. Reorganizes

Tanglefoot Co., Grand Rapids, Mich., the original commercial producer of fly-paper, founded in 1885, is the subject of an article in the August 8 issue of *Printer's Ink*, in which the history and reorganization of the company is reviewed in detail. Early this year, it is reported, the board of directors of the company appointed a new executive committee to operate the company and to undertake a complete revamping of its merchandising and distributing program. This move was initiated to regain some of the business the company had lost to competitors. The committee consisted of Phelps Newberry, E. St. Elmo Lewis, Fred Smith and R. Y. Cutler. These men drafted E. J. Durkin, a promotional executive of Hinde & Dauch Paper Co., Sandusky, Ohio, to serve as sales and advertising director and do the work of modernizing and streamlining the company's operations.

The first job was to simplify and balance the "Tanglefoot" line. Year by year, products had been added to the line to offset the diminishing market for the original "Tanglefoot" fly paper. Two grades of fly spray, two grades of stock spray, ant powder, roach powder, garden spray, mosquito repellent and spray guns were among the items that comprised the "Tanglefoot" line. These were analyzed from every angle and it was decided to discontinue all of them. Products retained were "Tanglefoot Fly Paper," "Tanglefoot" and "Sure Catch" fly ribbons, a steam sprayer, a pyrethrum base insecticide, "Tree Tanglefoot" and "Tanglefoot Gummed Tape."

HIGH MELTING POINT

ARISTOWAX

145/150° F. Amp.

160/165° F. Amp.

FULLY REFINED PARAFFIN WAX

PRODUCT OF

THE UNION OIL COMPANY OF CALIFORNIA

DISTRIBUTORS

PETROLEUM SPECIALTIES

INC.

570 LEXINGTON AVENUE NEW YORK, N. Y.

GRP

Refined dewaxed

WHITE SHELLAC

of highest quality and uniformity for non-rubbing floor waxes

Manufacturers and importers of all grades of shellac. We also develop in our laboratory shellacs for your special needs.

MANILA GUM

Loba C Manila Nubs **D B B Manila Chips**

GILLESPIE - ROGERS - PYATT CO.

80 John Street Incorporated New York, N. Y.

Hogan Heads New Penick Dept.

A new Department of Medical Research has just been set up by S. B. Penick & Co., New York, with Howard Hogan, M.D., as director. Dr. Hogan for the past three years has been director of medical research for the Pyridium Corp., Nepera Park, N. Y. While with them he investigated and produced sulfadiazene.

Appoints S. American Agent

The Janitors Supply House, Inc. of Baltimore, has recently appointed Eggers & Heinlein, Inc. exclusive exporting representatives of "Jan-O" maintenance products in nineteen South American cities, including Mexico and the Philippines. According to Walter K. Tracey, vice-president of Janitors Supply House, there are increasing possibilities for the sale of sanitary chemicals in South America due to the withdrawal of European competition.

Am. Home Sells Debentures

The American Home Products Corporation privately sold $5,000,000 of its 3½ per cent, 15-year debentures on July 31. The corporation is said to have used $2,160,000 of the amount received from the sale to pay off notes issued on May 23, and to have retained the balance for working capital and other corporate purposes.

Check Barton Chemical Claims

Barton Chemical Co., Chicago, selling insecticides, bleaches, cleaners, etc., has agreed as the result of intervention of the U. S. Federal Trade Commission to cease making exaggerated claims as to the value, quality or composition of premiums offered to buyers of its products.

McCauley Joins Velsicol

W. E. McCauley, for four years assistant entomologist with the State of Illinois Natural History Survey, has resigned to accept a position with the Velsicol Corporation, 3542 North Kimball Avenue, Chicago, as manager of their Insecticide Division. Mr. McCauley has been in direct charge of the research and educational program of the Survey pertaining to household and industrial insect control, and has also done work in the field of animal parasite

W. E. McCAULEY

control. The Velsicol Corporation, a chemical manufacturer specializing in petroleum derivatives, has recently established an insecticide division to handle certain of its materials for use in the field of insect control, particularly against livestock, household, and industrial pests. These synthetic products, made by a new process, are said to be totally different from insecticides heretofore used. They may be used alone or in conjunction with other insecticides.

Furman N. Y. Merck Mgr.

G. S. Furman has been named by Merck & Co., Rahway, N. J., as manager of their New York office, succeeding Gustave Bayer who retired two months ago. Mr. Furman has been assistant manager of the Merck New York office for the past four years.

Anchor Moves Closure Plant

Anchor Hocking Glass Corp. has just moved to its new plant at Connellsville, Pa., the production of all metal and molded caps and sealing equipment formerly turned out by its plant at Long Island City. The new set-up is said to permit of more economical straight-line production, and to allow for unlimited future expansion. Warehouse facilities have been enlarged, making it possible to carry a larger stock of caps on hand.

Gumpert Acquires Noxon

Ownership of Noxon, Inc., maker of "Noxon" metal cleaner polish, no-rubbing wax and insecticide, with plants in Philadelphia and Newark, N. J., has been acquired by S. Gumpert Co., of Ozone Park, New York. Since August 15th when the purchase was concluded the firm has been operated as a subsidiary of the Gumpert Company. Officers of Noxon, Inc., under the new ownership are Daniel W. Janover, president; Robert G. Janover, vice president and general manager; and Howard G. Janover, treasurer, who hold similar offices in the Gumpert Company. The latter firm is a large manufacturer of food, flavoring and similar products in the hotel, institutional, restaurant, ice cream and bakery field. The main office of Noxon has been transferred from Chrysler Building, New York City, to the Gumpert plant at Ozone Park. The "Noxon" brand name will be continued under its new sponsorship.

Annand Succeeds Lee Strong

P. N. Annand has been named chief of the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture, succeeding the late Lee A. Strong. Dr. Annand joined the Department of Agriculture staff in 1929. In 1937 he was appointed research assistant to the chief of the bureau and in April, 1939, was made assistant chief of the bureau. Avery S. Hoyt, also formerly an assistant chief of the bureau, has been named associate chief. Both appointments became effective August 16.

Mandel Products Move

Mandel Products Co. manufacturer of liquid filling machines and labeling machines of 179 Van Buren St., Newark, N. J., has purchased a building at 207-215 Astor St., and plans to move to the new quarters on Sept. 1. The firm started 10 years ago in a small one room establishment, taking larger quarters steadily as business increased. Two brothers, Louis and Jack Mandel operate the business.

AMERICAN STANDARD APPLICATORS

Bring Biggest Profits

HOLZ-EM APPLICATOR
THE HOLZ-EM APPLICATOR
is the old reliable outstanding choice of thousands of large institutions and floor maintenance engineers everywhere for applying self-polishing wax, seals, etc., to every type of floor.

American Standard Applicators not only bring the biggest direct profits, but also are the best insurance that your floor waxes and seals will be properly applied.

Don't risk inferior results

from your own products by selling or using cheap applicators. Floor maintenance experts design American Standard products. Only the finest materials and workmanship are combined in their manufacture.

Write for further details.

AMERICAN STANDARD MFG. CO.

2509-2513 South Green St., Chicago, Ill.

COLORS

for

Toilet Soaps — **Shampoos**
Liquid Soaps — **Lotions**
Para Blocks — **Hand Soaps**
Shave Creams — **Sweep Compounds**
and other Chemical Specialties

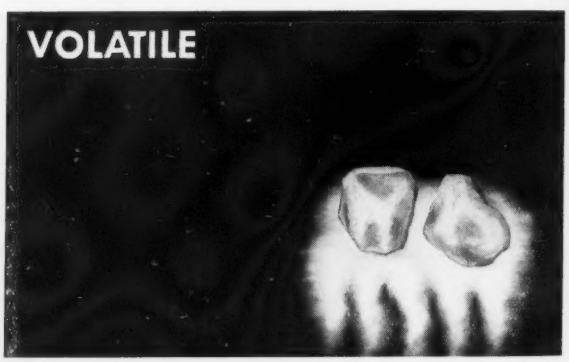
* * * *

Does your product require a *certified color* under the new law? Let us advise you, and supply you with exactly the right color for the right purpose!

Interstate Color Co., Inc.

9 Beekman Street — **New York**

"Color it for greater sales appeal."



PURE UNADULTERATED PARADICHLORBENZENE

is a highly volatile, effective moth controlling agent. Its quick, thorough action in confined spaces, and immediate disappearance of its slight, pleasant odor from fabrics upon their removal from closets and chests builds reputation and sales for packaged brands of crystals and deodorant blocks. **HOOKER PARADI** is pure, unadulterated paradichlorbenzene furnished in six convenient sizes of bright, clear, free-flowing crystals for repackaging.

HOOKER ELECTROCHEMICAL COMPANY
NIAGARA FALLS, NEW YORK
NEW YORK CITY — TACOMA, WASHINGTON

692

In reorganizing its distribution plan, the company built its entire 1941 program around enlargement of distribution through paper jobbers. Previously the Tanglefoot company had never adhered to a clearly defined distribution policy. Selling had been conducted on a direct sales basis through eighty commission salesmen on the road. This was discontinued as a general practice and the sales force was reduced from eighty salesmen to twelve salaried representatives to train the sales staffs of paper jobbers.

Packages, advertising and displays were streamlined and modernized, advertising being made more consistent and directed to prospective "Tanglefoot" product users in business papers covering the restaurant, hotel, food industries, drug and grocer markets. Even the offices were remodeled and a new letterhead adopted.

In the past six months, it is reported, the new program has achieved gratifying results. With far fewer products and a much smaller sales force, sales, nevertheless have shown a substantial increase, with net profits greater than in many years. The board of directors recently elected R. Y. Cutler to the position of president and E. J. Durkin, vice-president.

—— ♦ ——

Lehn & Fink Sign with Union

Lehn & Fink Products Corp., Bloomfield, N. J., is reported to have signed a union shop check-off agreement with the United Mine Workers, CIO District Union No. 50, affecting some 300 employees at its plant. The contract is reported to provide for seniority rights, an average wage increase of twenty per cent, a week's vacation for six months' service, and two weeks' vacation for two and a half years' service, as well as ten holidays a year with full pay. Products of the company will now be listed as 100 per cent union made. William Gesell represented the company in the negotiations which, conducted on a friendly basis, occupied a period of six weeks.

Chlorine Fumes Fatal

One man was killed and more than fifty overcome by the effects of chlorine fumes which escaped from a railroad tank car at the plant of Standard Naphthalene Products Co., Kearny, N. J., August 7. The gas, which is believed to have escaped when a switching engine knocked a hose line off a tank car, affected an area of four or five square miles.

Several weeks later on August 26, two employees of the Rid-O-Moth Co., whose plant is jointly operated and adjoins that of the Standard Naphthalene Products Co., were overcome by hydrochloric acid fumes which leaked from a pipe in a room in which they were working. Any indications of sabotage in either accident were denied.

—— ♦ ——

N.P.C.A. To Meet Oct. 27-29

The ninth annual convention of the National Pest Control Association will be held at the St. Francis Hotel, San Francisco, October 27-28-29. The roster of speakers at the convention includes such headliners as: the chief of the Bureau of Entomology or one of his assistants, Dr. Thomas E. Snyder, Prof. William B. Herms, Dr. G. F. MacLeod, Dr. Alvin Cox, Prof. J. J. Davis, W. E. McCauley, Dr. J. C. Geiger, Esler Johnson, L. R. Alderman, William O. Buettner and Albert M. Akers. There are nine principal subjects or "spokes" around which addresses and discussions will take place: common household insects and pests; termites, wood boring insects and fungi; public relations; business practices; national defense in relation to pest control; legislation; research; and products and supplies. Addresses and papers are to be short with maximum time allowed for discussion. In addition, special luncheons have been planned as well as a full program of entertainment. Details will be announced later.

All members attending the convention have been invited to visit the museum at the California Academy of Sciences and its department of entomology, by Robert C. Miller, director.

ALLOW SINGLE-TRIP DRUM RE-USE

The Interstate Commerce Commission has authorized the Bureau of Explosives of the Association of American Railroads to permit the re-use of single trip steel drums under conditions which will assure the safety of such use. This suspension is calculated to diminish the pressure of steel barrel manufacturers for new steel barrels and demands upon steel mills for metal which cannot under present or prospective conditions be met. Shippers desiring permission to re-use single-trip containers are required to furnish pertinent information to the bureau, which is located at 30 Vesey street, New York.

—— ♦ ——

NPCA Officers at OPM Meeting

Officers of the National Pest Control Association travelled to Washington, D. C., early last month to confer with OPM officials on shortages of sodium fluoride and other supplies. A special meeting of representatives of trade associations called by the OPM was also attended by the NPCA delegates, including L. R. Alderman, president; William O. Buettner, secretary; W. J. Parker and P. Calvert Cissel. Recommendations resulting from the conference were, in part, as follows: Take care of vermin conditions first in those structures wherein are manufactured, kept, or stored products that are essential to the more direct national defense program. Where health hazards are involved, give prompt consideration and service. Substitute where possible; as for example,—use pyrethrum, borax, or even cut down on the fluoride content of the run-of-the-mill maintenance jobs. As an industry, work cooperatively.

Members of the industry were advised to supply the association with data regarding supplies so that specific statistics on the position of the industry may be compiled. Information was also solicited as to what distributors are unable to supply sodium fluoride.

ATTENTION MAKERS OF SELF POLISHING FLOOR WAX

MANILA GUMS have been adopted on a large scale in your industry effecting large savings.

Write for samples and full information.

WILLIAM H. SCHEEL, INC.
193 Water Street New York, N. Y.

QUALITY Plus ECONOMY
Victoria
TOILET TISSUES

NOW AVAILABLE IN BLEACHED OR UNBLEACHED

Fine tissues that meet the requirements of industrial plants, offices and institutions as to price and quality. Made by craftsmen with 60 years paper-making experience. Leading Paper Merchants sell VICTORIA tissues.

The Victoria Paper Mills Company
FOUNDED 1880. FULTON, N. Y.

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.
Manufacturing Chemists, Importers, Exporters
799 Greenwich St. New York City
Cable Address: "Pylamco"

"Steamaster"
INSECTICIDE SPRAYER

With steam serving both as an ingredient and as a force, the insecticide itself is held in moist suspension and the attack is made at full strength . . . thus guaranteeing a 100% thorough job of pest extermination. Completely enclosed heating element. Operates from any electric outlet. No fire hazard. Current shuts off automatically when water level drops below the level of the heating element.

A. C. ONLY

Write Today for Complete Details, Prices and Descriptive Literature.

DULA MFG. CO. INC.
351 Atlantic Avenue Brooklyn, N. Y.
Manufacturers to the Wholesale Trade Only

Toxicity of Red Squill

Factors affecting the toxicity of red squill were studied for the purpose of making it more effective as a rat poison. Red squill is about half as toxic for males as it is for female rats; standard assays of squill should therefore be based on male rats. The higher the temperature above 100° C. applied to red squill powder, the less toxic it becomes. The amount of moisture in bait containing the agent has little relation to the toxicity.

Large percentages of protein (casein) or carbohydrate (cornstarch), in squill baits, do not affect their toxicity; much fat reduces toxicity, pectin has the same effect. J. A. Lubitz, A. S. Levine and C. R. Fellers. *J. Am. Pharm. Assoc.* **30,** 69-72 (1941).

Effect of pH on Antiseptics

The pH of the medium has no appreciable effect on the fungistatic properties of such antiseptics as mercuric chloride, formaldehyde, phenol, copper sulfate, and iodine, which are apparently due to the inherently poisonous nature of the materials. Sodium thiosulfate, sodium sulfite, and hexamine, decompose at certain pH values, with the liberation of toxic products, so that pH has an indirect effect on the fungistatic properties of these compounds.

The pH has a significant effect on the fungistatic properties of benzoic acid, salicylic acid, acetylsalicylic acid, propionylsalicylic acid catechol (to some extent), resorcinol, hydroquinone, and boric acid. In the acid pH range, the type of compound represented by benzoic acid is a fungistat, but in the alkaline range it is not. Except for salt formation under alkaline conditions, the molecule is not affected by pH. Introduction of a hydroxyl group in the ortho position in benzoic acid, to form salicylic acid, weakens the molecule as a fungistat. When the hydroxyl group is introduced in either the meta or para positions of benzoic acid, the resulting compounds are no longer fungistatic. An analogous relation holds for phenol, catechol, resorcinol, and hydroquinone; if the polar (water-soluble) groups are concentrated in one area of the molecule, a more powerful fungistat results than if the polar groups are spaced around the nonpolar (oil-soluble) nucleus. Charles Hoffman, T. R. Schweitzer, and Gaston Dalby. *Ind. Eng. Chem.* **33,** 749-51 (1941).

Stable Hypochlorite Solution

A stable hypochlorite solution may be prepared substantially free of excess hydroxide by treating aqueous hydroxide solution with chlorine until the ratio of hydroxide present to hypochlorite, is not more than 1:40. The concentration of hydroxide is originally such as would normally decompose the resulting hypochlorite by the heat produced, but cooling during chlorination is made sufficient to prevent such decomposition. Larry J. Barton, to Clorox Chemical Co. Canadian Patent No. 398,274.

Antiseptic Tests

Comparison of the agar cup-plate method with antiseptic dilution data shows that the former yields as satisfactory results as serial dilution antiseptic tests. The presence of even 1 per cent of blood in the test medium reduces the antiseptic potency of mercury compounds by approximately one-third. The pattern of inactivation for four common mercurial antiseptics was the same. Ruth E. Miller and S. Brandt Rose. *Am. J. Clin. Path.* **11,** 414-24 (1941).

Germicide and Antioxidant

Hydrocarbons produced by the pyrolysis of benzene and including polyphenyl hydrocarbons having boiling points above the boiling point of biphenyl, are hydroxylated. A mixture is obtained which has germicidal properties and which may be used as an antioxidant with oils. Russell L. Jenkins, to Monsanto Chemical Co. U. S. Patent No. 2,240,073.

Testing Impregnated Fabrics

(*from Page* 103)

tion of the media, the incubation period, and the presence of organic matter in the inoculum.

Summary

THIS article describes a procedure, using a broth medium for testing the antibacterial properties of impregnated fabrics, and compares this test with the agar-plate method.

Twelve impregnated fabrics, which previously had been shown to possess varying amounts of resistance to the growth of *Chaetomium globosum*, were tested for their bacteriostatic and bactericidal activities against *Escherichia coli*.

It is concluded that the broth test possesses certain advantages compared with the agar-plate method in that it tests the antibacterial effect of an impregnated fabric upon a given organism in contact with the fabric, and determines bactericidal as well as bacteriostatic properties. The broth procedure may be adapted to test variable factors which might be encountered under practical conditions.

Some of the difficulties encountered in the practical application and evaluation of impregnated fabrics from the hygienic standpoint are mentioned.

Bibliography

[1]Furry, Margaret S., Robinson, Helen M., and Humfeld, Harry. *Ind. and Eng. Chem.*, 33, 538-545 (1941).

[2]Ruehle, G. L. A., and Brewer, C. M. United States Food and Drug Administration methods of testing antiseptics and disinfectants. *U. S. Dept. Agr. Cir. No. 198* (1931).

[3]Greenbaum, Sigmund S., and Harrison, Joseph W. E., *Pa. Medical Jour.* 43, 1289-1295, (1940).

[4]James, L. H., and Lundell, Ann C. *Hospital Reporter and Guide*, 1, (12) 22-28, (1940).

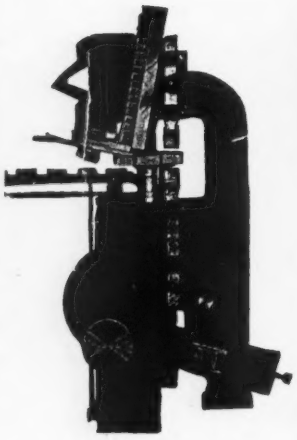
[5]Epstein, Samuel S. *Soap and Sanitary Chemicals*, XVI, (10) 99, 101, 103, 105, 109, 111 (1940).

[6]Rogers, Ruth Elmquist, Wheeler, Helen G., and Humfeld, Harry. Physical and chemical changes produced in bleached cotton duck by *Chaetomium globosum* and *Spirochaeta cytophaga*. *U. S. Dept. Agr. Tech. Bul. No. 726*, (1940).

[7]Marshall, M. S., and Hrenoff, A. K. *Jour. Infectious Diseases*, 61, (1) 42-54 (1937).

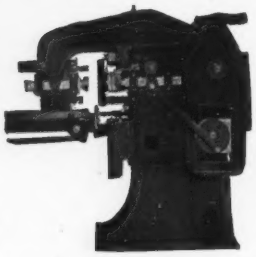
[8]Reddish, *Jour. Laboratory and Clinical Medicine* 14, 649-658 (1929).

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

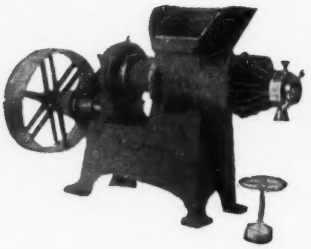


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

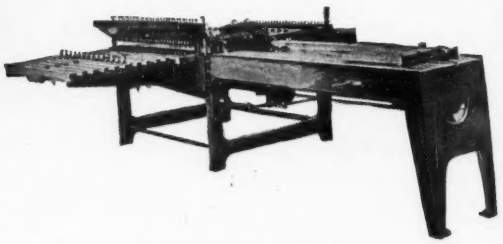
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

•

Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

•

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
Ralston Automatic Soap Presses.
Scouring Soap Presses.
Empire State, Dopp & Crosby Foot Presses.
2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
H-A 4 and 5 roll Steel Mills.
H-A Automatic and Hand-Power slabbers.
Proctor & Schwartz Bar Soap Dryers.
Blanchard No. 10-A and No. 14 Soap Powder Mills.
J. H. Day Jaw Soap Crusher.
H-A 6, 8 and 10 inch Single Screw Plodders.
Allbright-Nell 10 inch Plodders.
Filling and Weighing Machine for Flakes, Powders, etc.
Steel Soap frames, all sizes.
Steam Jacketed Soap Remelters.
Automatic Soap Wrapping Machines.
Glycerin Evaporators, Pumps.
Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
Perrin 18 inch Filter Press with Jacketed Plates.
Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
Day Grinding and Sifting Machinery.
Schultz-O'Neill Mills.
Day Pony Mixers.
Gardiner Sifter and Mixer.
Proctor & Schwartz large roll Soap Chip Dryers complete.
Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
Day Talcum Powder Mixers.
All types and sizes—Tanks and Kettles.
Ralston and H-A Automatic Cutting Tables.
Soap Dies for Foot and Automatic Presses.
Broughton Soap Powder Mixers.
Williams Crutcher and Pulverizer.
National Filling and Weighing Machines.

Send us a list of your surplus equipment— we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO — Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Production Man; Man with fifteen years' experience in managing production of chemical specialties, insecticides, polishes, drug products and liquors desires new connection. Graduate chemist with successful production record. For further details, communicate with Box No. 205, care *Soap & Sanitary Chemicals.*

Insecticide Sales: Man with twenty years' experience in sale of insecticide raw materials; well-known in insecticide, drug and allied trades desires new connection. Good sales record; moderate salary. Address Box No. 206, care *Soap & Sanitary Chemicals.*

Soapmaker and Superintendent — Familiar with the manufacture of all kinds of soap. Desires change of position. Address Box No. 207, care *Soap & Sanitary Chemicals.*

Soapmaker and Chemist with long experience making all kinds of soaps; glycerine recovery, etc. Can take full charge of plant. Address Box No. 199, care *Soap & Sanitary Chemicals.*

Salesman desires position with reliable manufacturer. Ten years' experience selling soaps, disinfectants, etc., to janitor and institutional supply jobbers and hardware dealers in New York City. At present employed and with present firm 10 years. Want permanent connection; willing to sell other lines, if necessary. Pleasing personality. Drive car. Will travel. Address Box No. 203, care *Soap & Sanitary Chemicals.*

Insecticide Materials:—Man with twelve years specialized experience in the sale of both natural and synthetic insecticide raw materials desires to make new connection with progressive manufacturer. Knows the manufacturers of agricultural, household and horticultural insecticides thoroughly in all parts of the country. Successful sales record. Best recommendations. At present employed but can be available September 1st. For further details, write Box No. 187, care *Soap & Sanitary Chemicals.*

Liquidating . . .

MACHINERY PURCHASED FROM 2 SOAP PLANTS
On Pacific Coast

4—Ralston Automatic Soap Presses.
5—Pkge. Machy. Co. Soap Wrapping Machines, Type N1.
2—Crosby Foot Presses.
1—Dunning Soap Amalgamator, 1500#.
1—14" x 8" belt driven Vacuum Pump.
1—Anderson Oil Expeller No. 1, with tempering apparatus.
At Buffalo, N. Y.
1—4-section Soap Chip Dryer with 5-roll Chiller.
At Our Newark Shops.
1—6-knife Soap Chipper, 15"; 1—8-knife, 30".
2—Hersey 1200# Horizontal Unjacketed Crutchers.
1—Houchin-Aiken 1200# Perfection Vertical Soap Crutcher.
1—Houchin 2-Way Soap Cutting Table; 1—One-way.
16—600# Soap Frames; 7—1200#.
1—#10A Blanchard Mill.
1—Houchin Parablock Foot Press, with sliding die and hopper.
1—Jones Vertical Automatic Soap Press.
1—Sargent 60" x 72" Soap Chilling Roll.

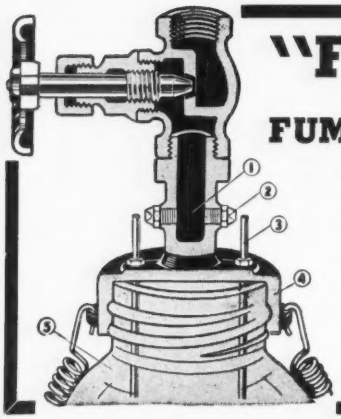
CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW NEW YORK, N. Y.
BArclay 7-0600 Cable Address: Equipment
We buy your idle Machinery—Send us a list.

ROTENONE
and
DERRIS RESINS

Manufacturers of finished insecticides have come, over a period of years, to look to DERRIS, INC. as headquarters for rotenone and derris products of all types. We are specialists in this field and are prepared to supply specifically compounded products made up according to each customer's varying needs.

Timbo Powder — Derris Powder
of Finest Grind

DERRIS, Inc.
79 WALL STREET NEW YORK, N. Y.



"FUMERAL" POWER SPRAYER

INSTANT DIFFUSION OF INSECTICIDES—
FUMIGANTS—DISINFECTANTS—DEODORANTS

(1) Operated by factory steam or air pressure—also by portable compressors or CO-2 gas. (2) Four pressure nozzles which account for Fumeral's well-known efficiency and economy. (3) Removable liquid tubes, easy to clean and to adjust. (4) Solid bronze casting of simple construction—safety screw thread—needle valve. (5) No pressure applied to the one quart or half gallon standard jar. Pat. 1934-1938.

FUMERAL STATIONARY AND PORTABLE DIFFUSERS AND SPRAYERS HAVE BEEN SOLD BY LEADING JOBBERS AND DISTRIBUTORS FROM COAST TO COAST SINCE 1932—YOUR GUARANTEE OF QUALITY AND DEPENDABILITY.—WRITE FOR DETAILS.

FUMERAL COMPANY — RACINE, WIS.

MIRVALE

CRESYLIC ACID
• • •
HIGH BOILING TAR ACIDS
• • •
NAPHTHALENE
• • •
TAR ACID CREOSOTE OIL
• • •

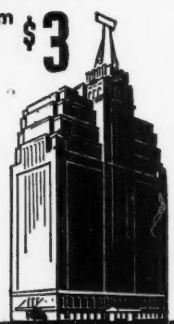
MIRVALE
CHEMICAL CO. LTD.
MIRFIELD, YORKS.
ENGLAND

Greenwood

Direct Subway Entrance to all Points of Interest

New York's Popular
HOTEL
LINCOLN
44TH TO 45TH STS. AT 8TH AVE.

OUR CHOICEST ROOMS From $3
1400 ROOMS each with Bath, Servidor, and Radio.
★ Four fine restaurants awarded Grand Prix 1940 Culinary Art Exhibition.



MARIA KRAMER
PRESIDENT
John L. Horgan
Gen. Mgr.
HOTEL EDISON
SAME OWNERSHIP

IN THE CENTER OF MID-TOWN NEW YORK

SOAP DIES and MOULDS

—for—
TOILET SOAPS
LAUNDRY SOAPS AND
BATH TABLET
STAMPING

For Foot and Power Presses

Established 1894

ANTHONY J. FRIES & SON CO.

717 Sycamore Street **Cincinnati, O., U. S. A.**

Soapmaker wanted by small factory in California producing soap powder, granulated and bar soaps. Please give experience and background. Address Box No. 201, care *Soap & Sanitary Chemicals.*

Chemist, man specializing for a number of years disinfectants, dips, fungicides, and allied products including some years experience with the government, seeks new position where his background and knowledge will be of value. Further details communicate. Address Box No. 185, care *Soap & Sanitary Chemicals.*

Wanted—Position wanted by young college graduate in soap, toilet goods, perfuming materials or allied line. Short experience, willing to start at the bottom. Address Box No. 184, care *Soap & Sanitary Chemicals.*

Twenty Years Experience in the production of shoe polishes, special white shoe polishes, floor waxes, moment-black, nitrocolors for leather, finishes, dressings; Ago-glue for shoe factories, glues for porcelain, glass and metals; metal polishes, auto polish free from wax and abrasives and many other specialties; own creations. Owner of the famous "ERI" special formulas. Finest references. Address Box No. 177, care *Soap & Sanitary Chemicals.*

Insecticide Material Salesman: Pacific Coast representative of national supplier of Cube and Derris powder to the manufacturing trade desires new connection with firm capable handling volume tonnage. Thoroughly versed in insecticides. Address Box No. 178, care *Soap & Sanitary Chemicals.*

Positions Open

Salesman Wanted: Qualified salesman with proven record to sell disinfectants, floor maintenance, and complete janitor supplies. Liberal commissions; drawing account and bonus to right man. Give complete details in first letter. Post Office Box 2134, Memphis, Tenn.

Soapmaker—Familiar with all types hard and soft textile soaps. State experience and salary expected. Address Box No. 200, care *Soap & Sanitary Chemicals.*

Miscellaneous

Successful specialty business, established over 25 years, is on the market because of partnership disagreement. Purchase price involves about $100,000. Details available upon establishment of authentic interest. Box No. 202, care *Soap & Sanitary Chemicals.*

F. & S.

Quality Colors
for
TOILET SOAPS
LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N. Y.
Import—Manufacture—Export

A New Departure In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER is now available in a new model,—with four forward and reverse speeds. The flexibility in operating technique afforded by this wider choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2400 and 3200 pounds.

HUBER MACHINE CO.
"Builders of Good Soap Machinery for the Past 45 Years"
265 46th STREET BROOKLYN, N. Y.

GREATER *Kills* with CERTOX

REG. U. S. PAT. OFF.

MOUSE SEED
ANT PASTE
and SYRUP

Effective products at wholesale for the Pest Control Industry

YOUR GUARANTEE:

All CERTOX products are manufactured according to exacting specifications under personal supervision of I. H. LUTTAN, B. S. A., Entomologist.

SPECIAL CONTRACT PRICES Available to Cover your Annual Needs.

YORK CHEMICAL CO.

Suppliers of Complete Exterminating Chemicals.

424 West 18th Street, New York, N.Y.

THE PUMP THAT IS SELF-ADJUSTING FOR WEAR
FAMOUS BUCKET DESIGN

BLACKMER
• ROTARY •
PUMPS

Handle More Gallons Per Penny

Put this Blackmer economy to work in your plant — Write for Bulletins.

BLACKMER PUMP COMPANY
1899 Century Ave., S.W. Grand Rapids, Michigan

GOOD CHEMICALS
FOUNDED 1868
JAMES GOOD INC.
PHILADELPHIA
U.S.A.

"Good" Disinfectants

Pine Oil Disinfectants Coefs. 3 and 4

Phenolic Emulsifying Disinfectants Coefs. 2 to 20

Soluble Cresylic Disinfectant
Coef. 2.5 (B.A.I. Specifications)

Saponated Solution of Cresol
U.S.P. XI (Cresol Compound Solution)

All made under careful laboratory control. Phenol coefficients determined by LaWall and Harrisson Laboratories.

Other "GOOD" Products

Insect Sprays	Vegetable Oil Soaps
Cattle Sprays	Liquid Soaps
Bed Bug Sprays	Scrub Soaps (Liquid & Jelly)
Agricultural Insecticides	Floor Wax and Polishes

BULK PACKAGES AND PRIVATE LABEL

JAMES GOOD, INC.

Manufacturing Chemists—Since 1868

2112 E. SUSQUEHANNA AVE. PHILA., PA.

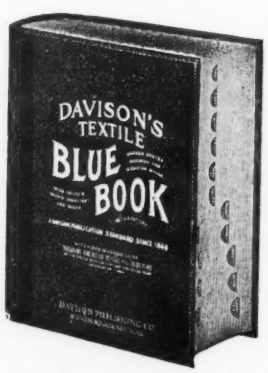
Textile Plants Need Soap

ALMOST NINE THOUSAND Textile Mills, Dyers, Finishers, Bleachers and printers in the United States and Canada are fully reported in the new 76th Year Book. Many Mills and Dyers Buy Soap in large amounts!

In addition 30,000 associated firms are listed and reported —dry goods commission merchants, yarn, cotton, linters, silk, rayon, waste, wool, rags, fibres, machinery, chemicals, supplies and other allied industries.

76th Year

Issued annually— Supplement of New Mills and changes is sent to every subscriber free



76th Year

DeLuxe Office Edition $7.50

Thin Paper Handy Size $5.00

Salesmen's $4 Edition

New 76th Year Issue!

Over fourteen hundred pages in size, thumb indexed for quick reference, strongly bound and with information arranged for instant use, this volume will make money for your sales department.

DAVISON'S TEXTILE BLUE BOOK

"A Davison Publication — Standard Since 1866"
Executive, Sales and Production Offices
RIDGEWOOD - : - NEW JERSEY, U. S. A.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 204, care *Soap & Sanitary Chemicals.*

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Rebuilt Guaranteed Machinery: Two roll soap chilling unit, motor driven, Proctor soap dryers; crutchers; plodders; soap presses, automatic and foot operated; 12x30 and 16x40 three roll water cooled steel mills; 2, 3 and 4 roll stone mills; Johnson carton sealers, powder fillers and mixers; chippers; vertical and horizontal mixers; grinders; boiling kettles, cutting tables; soap frames, filters and filter presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

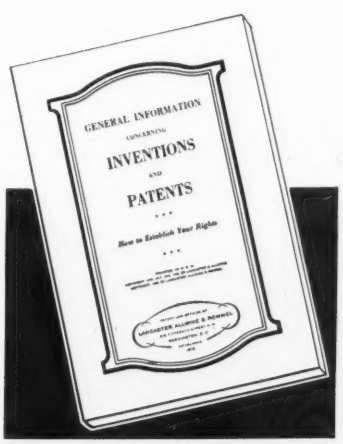
Cincinnati Firm would be interested in representing established firms offering materials for the soap industry. Address Box No. 162, care *Soap & Sanitary Chemicals.*

MANILA GUM

In the manufacture of your non-rubbing liquid floor waxes INNES Manila Gums can improve your product and cut your costs. Ask us for further information, prices and samples.

Also a full line of other spirit and oil soluble Natural Resins.

O. G. INNES CORPORATION
VARNISH GUMS
533-541 CANAL STREET
(NEAR WEST STREET)
NEW YORK, N. Y.
Telephone
WAlker 5-8481-2-3



Send for a copy—it's free

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's fees, sent free on request. Simply ask for "booklet and fee schedule." No charges are made for preliminary advice, either in connection with patent, trade-mark or copyright cases.

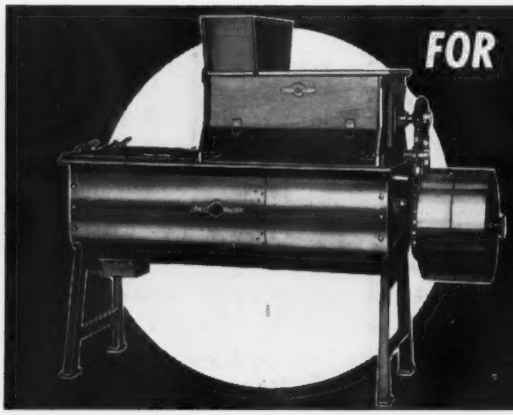
Lancaster, Allwine & Rommel
Registered Patent and Trade-Mark Attorneys
402 BOWEN BLDG. WASHINGTON, D. C.

Drop in for a real
MARYLAND WEEK-END!

Plan to stay a few days—make your next Baltimore business trip a pleasure visit! There's ever so much to see and do in this famous old Maryland city and the surrounding country-side. Enjoy them to the utmost with the comforting knowledge that at each day's end you will come "home" to a delightful cuisine, a sound sleep in one of the most comfortable beds in Maryland . . . and service that seems to have been planned with you alone in mind!

700 ROOMS FROM $3

LORD BALTIMORE HOTEL
BALTIMORE, MARYLAND



FOR EFFICIENT, ECONOMICAL MIXING

OF SWEEPING COMPOUNDS, DEODORANT CRYSTALS, INSECTICIDES Lower power consumption, rapid, through mixing, and long trouble-free service feature this Sprout-Waldron mixer. Brush sifter, to remove lumps and foreign material, is optional equipment. Capacities 2½ to 15 cu. ft. *Write for catalog.*

SPROUT, WALDRON & CO., INC.

132 SHERMAN ST. MUNCY, PA.

MIXING, CONVEYING, POWER TRANSMISSION MACHINERY

Is it dry?

If so, we can pack it. Complete facilities for packaging all types of envelopes, cartons, or cans.

We can solve your packaging problems.

The Stevens-Wiley Mfg. Co., Inc.

PALETHORP AND BERKS STS.

PHILADELPHIA, PA.

TETRA SODIUM PYRO PHOSPHATE

Crystalline-Anhydrous

Alkalies
Paradichlor benzene
Carbon Tetrachloride
Tri Sodium Phosphate

•

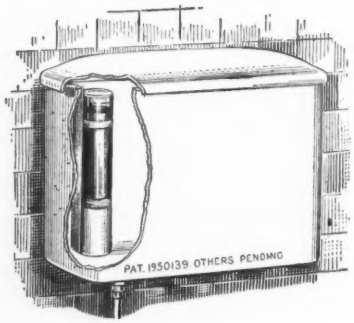
We are in a favorable position to work with you on your requirements for these and other chemicals used in the manufacture of soaps, detergents and sanitary products. Why not check with us?

•

JOHN A. CHEW, INC.

60 East 42nd Street New York

Phone: MUrray Hill 2-0993



DISTRIBUTORS WANTED FOR

STERYL-FLUSH

Concealed Guardian of the Modern Bath Room

CREATES NEW MARKET FOR YOUR PINE OIL

STERYL-FLUSH disinfects, deodorizes and keeps the entire toilet system clean. Does not cover up offensive odors, but removes them completely. STERYL-FLUSH fits inside the toilet tank where it operates unseen. It operates only when the toilet is used by flow of water. Non-corrosive and non-injurious to the hands. Pleasantly scented with pure pine oil—just enough to give the bath room a faint, cleanly odor of careful attention to sanitation.

SOLD EMPTY OR FILLED

STERYL PRODUCTS CORP.

112 S. 16th Street Philadelphia, Pa.

RAW MATERIALS AND EQUIPMENT

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 131 for page numbers. *"Say you saw it in SOAP."*

ALKALIES

John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Michigan Alkali Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Supply Co. (Disinfectants, etc.)
Davies-Young Soap Co. (Soaps and Floor Wax)
Federal Varnish Co. (Wax Products)
Franklin Research Co. (Floor Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
R. Gesell, Inc. (Chemical Specialties)
James Good, Inc. (Sanitary Chemicals)
R. M. Hollingshead Corp. (Soap and Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Uncle Sam Chemical Co. (Sanitary Chemicals)
White Tar Co. (Disinfectants, etc.)

CHEMICALS

American-British Chemical Supplies
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Cowles Detergent Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Michigan Alkali Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Fuld Bros.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chemicals, Inc.
Velsicol Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Blackmer Pump Co. (Pumps)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
J. M. Lehmann Co. (Soap Machinery)

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 141 for page numbers. *"Say you saw it in SOAP."*

MACHINERY, (Contd.)

Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Commercial Solvents Corp. (Emulsifying Agents, Solvents)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Stevens-Wiley Mfg. Co. (Packaging Dry Products)
Victoria Paper Mills Co. (Toilet Tissues)
York Chemical Co. (Mouse Seed, Ant Paste)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Antoine Chiris Co.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Geo. Lueders & Co.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
John Powell & Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
Garfield-Williamson Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
S. B. Penick & Co.
John Powell & Co.
R. J. Prentiss & Co.

SILICATES

Cowles Detergent Co.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Bobrick Mfg. Co.
Chicago Precision Prods. Co.
Fuld Bros.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Dula Mfg. Co. (Steam Sprayers)
Fumeral Co. (Pressure Sprayers, Steam, Air, CO_2 gas)

WAXES AND GUMS

(Carnauba, Manila, Shellac, Candelilla, etc.)

Gillespie-Rogers-Pyatt Co.
O. G. Innes Corp.
Innis, Speiden & Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)
Wm. H. Scheel, Inc.

PROFESSIONAL DIRECTORY

SKINNER & SHERMAN, INC.
246 Stuart Street — Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.
Chemical Analyses and Tests of All Kinds

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street — New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
GRIDLEY, ILLINOIS

FOSTER D. SNELL, INC.
Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you
Every Form of Chemical Service
313 Washington Street — Brooklyn, N. Y.

ALAN PORTER LEE, Inc.
Contracting and Consulting Engineers
Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products
136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

H. A. SEIL, Ph.D. — E. B. PUTT, Ph.C., B.Sc.
SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Organic Insecticides, Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
DRUGS — ESSENTIAL OILS — SOAP
16 East 34th Street, New York, N. Y.

Soaps • Waxes • Polishes
Detergents • Disinfectants
Analysis *Research*
Formula *Development*
Hochstadter Laboratories INCORPORATED
254 West 31st St. — New York City

SOAPS — VEGETABLE and ANIMAL FATS — GLYCERINE — DETERGENTS
Analysis — Research — Consultation
H. P. TREVITHICK, Chief Chemist
New York Produce Exchange
2 BROADWAY — NEW YORK

Patents—Trade Marks
All cases submitted given personal attention
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building — Washington, D. C.

Refer To Your 1941
BLUE BOOK
for F.D.A. Method for Testing of Disinfectants and Antiseptics.
Official N.A.I.D.M. Method for Testing and Grading of Insecticides.
Free with a $3.00 subscription to SOAP.
$4.00 Foreign
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street — New York, N. Y.

. . . Official Test Insecticide

STOCKS of the 1941 Official Test Insecticide are available for immediate shipment from the office of this Association. The 1941 O.T.I. is required for all testing and grading of fly sprays by the official Peet-Grady Method. The 1941 O.T.I. will remain official until June 1, 1942.

Directions for use of the O.T.I. and the technique of the Peet-Grady Method are given in a booklet, a copy of which is included in each carton of O.T.I.

The O.T.I. is available at $5.00 per dozen bottles, plus shipping costs, to members of this Association. To non-members, there is an additional service charge of $1.00 per dozen bottles. Single bottles are $1.00 each. Check with order is required.

▼

National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

OFFICERS

President . . . . . W. J. Zick, Stanco, Inc., New York
First Vice-President . . . . . John Curlett, McCormick & Co., Baltimore
Second Vice-President . . . . . H. A. Nelson, Chemical Supply Co., Cleveland
Treasurer . . . . . John Powell, John Powell & Co., New York
Secretary . . . . . Ira P. MacNair, MacNair-Dorland Co., N. Y.

BOARD OF GOVERNORS

Gordon M. Baird
Baird & McGuire, Inc., Holbrook, Mass.
J. L. Brenn . . . . Huntington Labs., Inc., Huntington, Ind.
R. O. Cowin . . . . . Standard Oil of Ohio, Cleveland
W. B. Eddy . . . Rochester Germicide Co., Rochester, N. Y.
H. W. Hamilton . . White Tar Co. of N. J., Kearny, N. J.
P. B. Heller . . . . . B. Heller & Co., Chicago
Dr. E. G. Klarmann
Lehn & Fink Prods. Corp., Bloomfield, N. J.
Wallace Thomas . . . . . Gulf Oil Corp., Pittsburgh
R. H. Young . . . . Davies-Young Soap Co., Dayton, O.

INDEX TO ADVERTISERS

*** For further details see announcement in 1941 SOAP BLUE BOOK**

*American-British Chemical Supplies 106
American Can Co. ..... Aug.
American Standard Mfg. Co. 116
Anchor-Hocking Glass Corp. 81
*Aromatic Products, Inc. 102
*Associated Chemists, Inc. ..... June
Atlantic Refining Co. ..... Aug.

*Baird & McGuire, Inc. 86
Barrett Co. ..... Aug.
Blackmer Pump Co. 124
Bobrick Mfg. Co. 50
*Breuer Electric Mfg. Co. 108
Buckingham Wax Corp. 106

*Candy & Co. ..... June
Chemical Industries, 18th Exposition of 54
Chemical Supply Co. 112
John A. Chew, Inc. 126
Chicago Precision Products Corp. ..... June
*Antoine Chiris Co. ..... July
*Columbia Chemical Division 8
Commercial Solvents Corp. ..... Aug.
Compagnie Parento 54
*Consolidated Products Co. 121
*Continental Can Co. ..... Aug.
Cowles Detergent Co. ..... July
*Crown Can Co. 83

*Davies-Young Soap Co. 16
*Derris, Inc. 121
Diamond Alkali Co. ..... Aug.
*Dodge & Olcott Co. 52, 98
*Dow Chemical Co. 11
P. R. Dreyer Inc. 110
Dula Mfg. Co. 118
*E. I. du Pont de Nemours Co. 14

*Eastern Industries 34
Emery Industries, Inc. ..... Aug.

*Federal Varnish Co. 108
*Felton Chemical Co. 10, 85
Fezandie & Sperrle 123
Filtrol Corp. ..... Aug.
*Firmenich & Co. ..... 2nd Cover
Franklin Research Co. 112
Anthony J. Fries 122
Fritzsche Brothers, Inc. 42, 43
*Fuld Brothers 3
Fumeral Co. 122

Garfield Williamson Co. ..... Aug.
General Chemical Co. 6
*General Drug Co. 4
*R. Gesell, Inc. ..... Aug.
Gillespie-Rogers-Pyatt Co. 114
*Givaudan-Delawanna, Inc. 12, 13
James Good, Inc. 124

Hercules Powder Co. 84
Hochstadter Laboratories 129
R. M. Hollingshead Corp. 50, 104
*Hooker Electrochemical Co. 116
*Houchin Machinery Co. 60
Huber Machine Co. 123
*Hysan Products Co. 9

Illinois Chemical Labs. 129
*Industrial Chemical Sales Division
W. Va. Pulp & Paper Co. 56
O. G. Innes Corp. 125
*Innis-Speiden & Co. 50
Interstate Color Co. 116

R. A. Jones & Co. 18

Kenyapye 80
Karl Kiefer Machine Co. ..... June
*Koppers Co. 82
Kranich Soap Co. 54

Lancaster, Allwine & Rommel 125, 129
*A. P. Lee 129
*J. M. Lehmann Co. 52
Lincoln Hotel 122
Lord Baltimore Hotel 125
Geo. Lueders & Co. ..... Aug.

*The Mac Lac Co. 104
Magnus, Mabee & Reynard, Inc. 72
*Mantrose Corp. ..... Aug.
Manufacturing Chemist 48
*McCormick & Co. ..... Aug.
McLaughlin Gormley King Co. 74, 75
Michigan Alkali Co. ..... Aug.
Frank Miller & Sons ..... Aug.
Mirvale Chem. Co. 122
Monsanto Chemical Corp. ..... 4th Cover

*National Can Co. 7
Newman Tallow & Soap Machinery Co. 120
*Niagara Alkali Co. ..... Bet. 62 and 63
Norda Essential Oil & Chemical Co. 15

*Orbis Products Co. ..... Aug.

*S. B. Penick & Co. 100
Petroleum Specialties, Inc. 114
*Philadelphia Quartz Co. 38
*Pittsburgh Coal Carbonization Co. ..... Aug.
*Pittsburgh Plate Glass Co. 8
*John Powell & Co. 71, 79
R. J. Prentiss & Co. 73
*Proctor & Schwartz, Inc. 68
*Pylam Products Co. 118

*Reilly Tar & Chemical Co. 110
*Rohm & Haas Co. 96

*C. G. Sargent's Sons Corp. 66
Wm. H. Scheel, Inc. 118
Seil, Putt & Rusby 129
*Skinner & Sherman 129
*Foster D. Snell 129
*Solvay Sales Corp. ..... 40, 3rd Cover
*L. Sonneborn Sons ..... July
Sprout, Waldron & Co. 126
Standard Silicate Co. ..... Aug.
Stevens-Wiley Mfg. Co. 126
Stillwell & Gladding 129
*Stokes & Smith Co. ..... Aug.

*Tar & Chem. Division Koppers Co. 82
Harry P. Trevithick 129
Jos. Turner & Co. ..... Aug.

*Uncle Sam Chemical Co. ..... Aug.
Ungerer & Co. ..... Front Cover
U. S. Industrial Chemicals, Inc. 44

Van Ameringen-Haebler, Inc. 17, 78
Velsicol Corp. ..... Aug.
*Albert Verley, Inc. ..... Aug.
*Victor Chemical Works ..... June
Victoria Paper Mills Co. 118

*Warner Chemical Co. 46
*Welch, Holme & Clark Co. 68
*White Tar Co. of N. J. 82
Williams Sealing Corp. 77
York Chemical Co. 124

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

"What's that, Cuthbert,—they never heard of our firm?"

Among the Unknowns . . .

PEOPLE don't like to do business with strangers. Sales resistance is materially reduced if buyers know your firm, either directly or by reputation. Regular trade paper advertising can aid greatly in making and keeping your firm and your products better known . . . making for better acceptance of your products . . . and making it easier for your salesmen to sell.

To make and keep your firm and products better known in the field of soap products, insecticides, disinfectants, and other sanitary products and chemical specialties, we suggest regular advertising in

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET NEW YORK

Member Audit Bureau of Circulations

Tale Ends

IN the face of general commodity scarcities and higher prices, pyrethrum stands out like a lighthouse. Prices have again been reduced recently and pyrethrum products are cheaper than ever and supplies ample. Quite a novelty.

* * *

Improvement in the quality of white floating soaps on the American market has been great during the past year. The "floaters" of today have the finish and appearance of the imported luxury soaps of yesteryear.

* * *

A Cornell professor said recently that manufacturers of pyrethrum insecticides are now beginning to indicate on the packages the dates when the products were made. Are they? Not a bad idea for powders anyway.

* * *

Today is no time to be out of touch with things! Take care of that subscription to *Soap & Sanitary Chemicals* promptly. One little item may save you a hundred times or more the three-dollar cost of your subscription. Don't miss any issues!

* * *

In a large super-market in New England:—two bins of scouring powder, both widely-known brands, one priced at eight cents, the other at nine,—the eight-center almost all sold, the nine-center only a few cans sold. Does the one-cent difference in price account for this? It happened to be Maine, so it probably does.

* * *

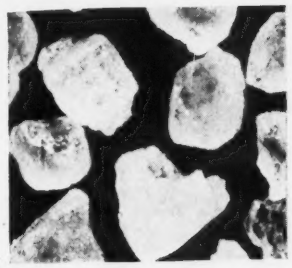
One of our features this month reports the growing scarcity and rapidly advancing prices on the whole list of soap perfuming materials. And word comes over the grapevine of several soapers selling back substantial quantities of their stocks of natural oils—on the theory, we suppose, that they are worth too much now for use in soap perfumes. Only the future will tell whether such a policy is long or short sighted.

SOLVAY

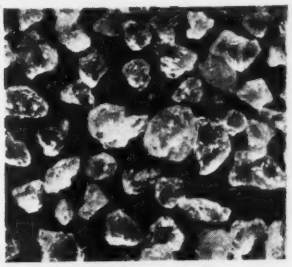
TRADE MARK REG. U. S. PAT. OFF

PARA-DICHLOROBENZENE

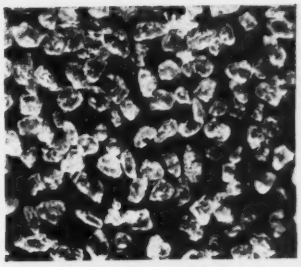
CRYSTAL SIZES (shown actual size)



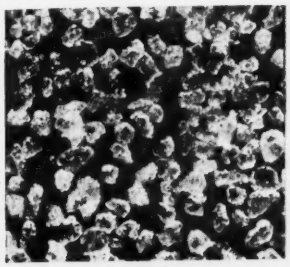
GRADE No. 1



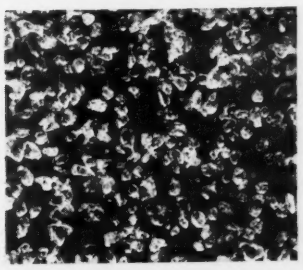
GRADE No. 3



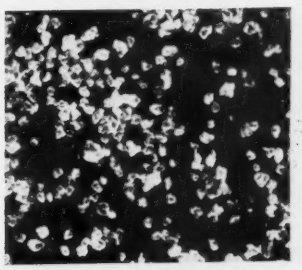
GRADE No. 5



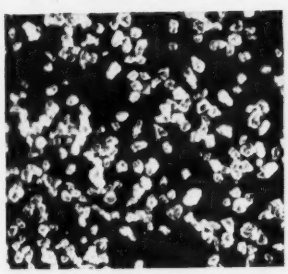
GRADE No. 6



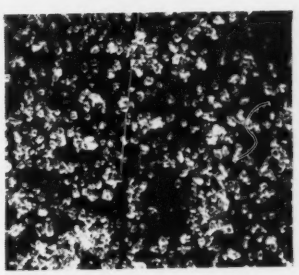
GRADE No. 7



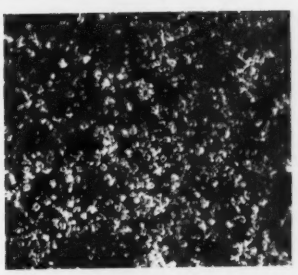
GRADE No. 8



GRADE No. 9



GRADE No. 10



GRADE No. 11

SOLVAY SALES CORPORATION, 40 Rector Street, New York, N. Y.

Gentlemen: Please send me a sample of the grade of Solvay Para-dichlorobenzene I have checked off, along with complete information.

Name.....

University of Idaho
LIBRARY
MOSCOW IDAHO

Company.....

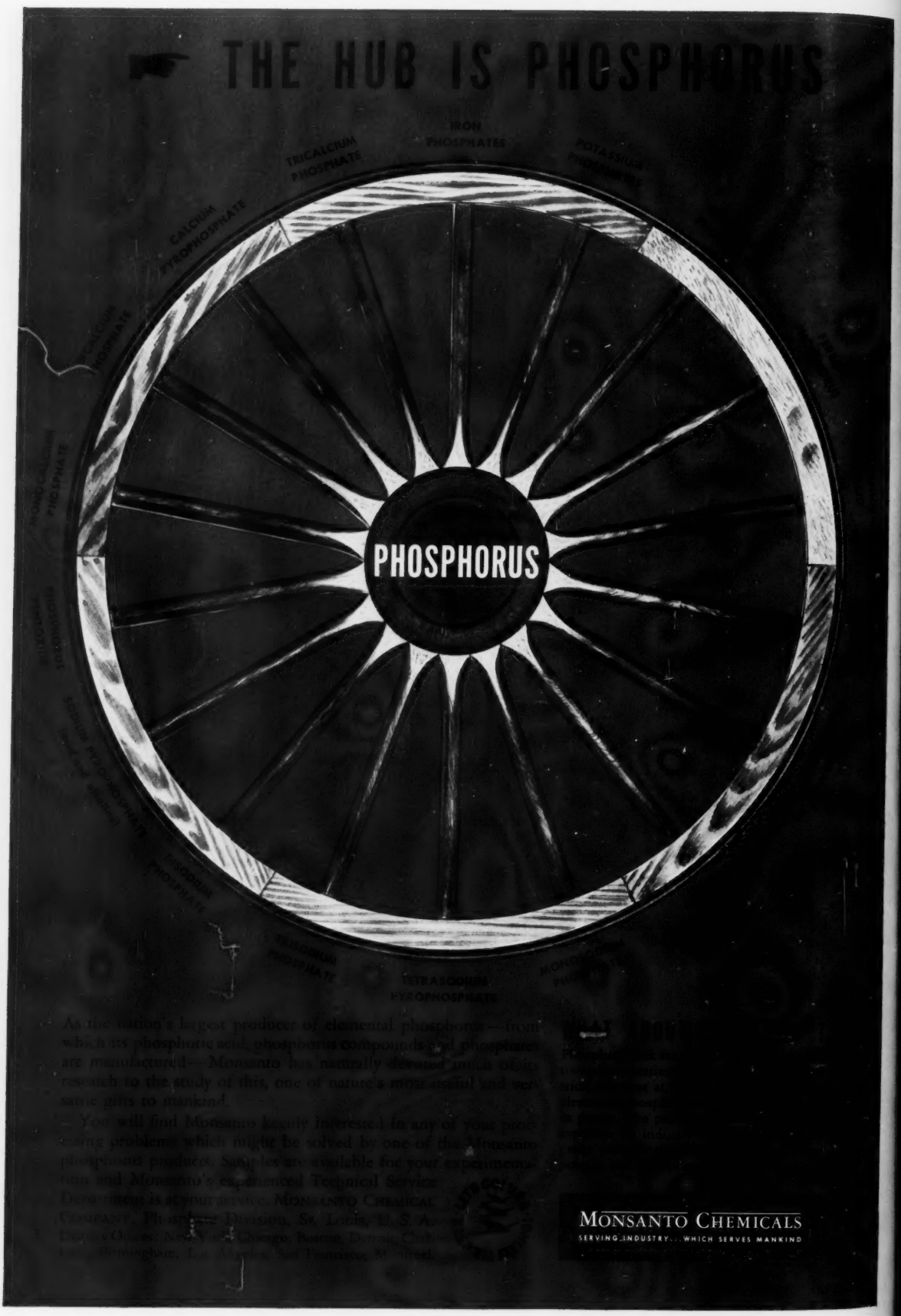
Address.....

City..... *State*..... DY-941

1
3
5
6
7
8
9
10
11

You check the Grade

• • • WE'LL DO THE REST . . . We will send you a sample of the grade you check off . . . send you complete information on Solvay Para-dichlorobenzene . . . or if you are uncertain of your requirements, our technical staff is ready to help you select the most efficient grades for your particular purposes. Make use of Solvay service!


THE HUB IS PHOSPHORUS
TRICALCIUM PHOSPHATE
IRON PHOSPHATES
CALCIUM PYROPHOSPHATE
PHOSPHORUS
TETRASODIUM PYROPHOSPHATE
MONSANTO CHEMICALS
SERVING INDUSTRY . . . WHICH SERVES MANKIND